

1	Course title	Pharmaceutical Nutrition and Diet Therapy
2	Course number	1203519
3	Credit hours (theory, practical)	3 (theory)
	Contact hours (theory, practical)	3 (theory)
4	Prerequisites/corequisites	Pharmacotherapy III (1203504)
5	Program title	PharmD
6	Program code	
7	Awarding institution	The University of Jordan
8	School	Pharmacy
9	Department	Biopharmaceutics & Clinical Pharmacy
10	Level of course	Undergraduate
11	Year of study and semester (s)	Second semester of the 5 th year
12	Final Qualification	PharmD
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	8 May 2020

16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

Clinical Pharmacy Specialist. "MOH'D NOUR" BANI YOUNES, MSc in Clinical Pharmacy
BCPS, BCCCP, BCNSP, BCACP, BCIDP, CCSAP Reviewer.

Office: 0

Phone: 0772399625

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Office hours :

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

None

18. Course Description:

As stated in the approved study plan.

The basic principles of human nutrition are investigated, emphasizing the nutrients, food sources, and their utilization in the body for growth and health throughout life. This course also assesses contemporary nutrition issues. A comparative view of nutrition as it relates to the treatment of disease, this course emphasizes the evaluation of assessment data, the nutrition care process, methods of nutrition support, food and drug interactions and applications of nutrition interventions for diseases of the gastrointestinal tract, liver and biliary tract, pancreas, metabolic stress, anaemia, heart failure and transplant, pulmonary disorders, cancer, HIV infections, renal disease and metabolic disorders. This course also covers the importance of Nutraceuticals in diet and nutritional formulas and the role of the pharmacist in clinical nutrition.

19. Course aims and outcomes:

A- Aims:

1. Describe the basic components of food and their different variety needs either for normal persons or patients.
2. Understand the clinical issues of certain foods use.
3. Provide patient education about foods, diets and prescribe the best food regimen for both normal and patients.
4. Provide patients with all possible food-drug interactions.
5. Identify disease related to certain foods or elements deficiency or insufficiency.
6. Recommend the most appropriate food, vitamins, nutraceuticals or dietary supplements for a selected patient or normal healthy ones.
7. Differentiate between different formulas.
8. Assess the patient wasting severity and energy requirement.
9. Assess the most appropriate nutritional strategy based on caloric requirements and wasting severity.
10. Select the most appropriate corrected protein density and formulate the nutritional formula based on.
11. Assess the correct patient fluid requirement based on total outputs, sodium concentration, and interstitial hydration status.
12. Assess the patient catabolic status and monitor response to the nutritional formulas.
13. Select the most appropriate initial formula based on patient clinical condition and adjust it according to the response.

B- Course Intended Learning Outcomes (ILOs):

Upon successful completion of this course students will be able to ...

A] Foundational Knowledge

Develop, integrate, and apply knowledge from the foundational sciences in Clinical sciences (learner)

Remember

- 1) Recall facts, terms, basic concepts, and information regarding: selected micronutrient deficiency syndromes, clinical uses of nutritional therapy, diet-drug interactions and contraindications.

Understand

- 2) Explain and outline goals of nutritional therapy within the context of diseases' Clinical manifestations and complications of diseases; and within the context of malnutrition and wasting severity.

Applying

- 3) Identifying malnutrition related problems resorting to gained knowledge and guidelines

Analyze

- 4) Examine and inspect subjective and objective evidence related to simulated cases to: prioritize patients' wasting severity; recommend appropriate nutritional strategy; and recommend appropriate protein density after correction with non-nutritional calories

B] Skills essential to practice pharmacy

Proactively investigates new knowledge, approaches or behavior and takes steps to evaluate and improve performance (Self-learner)

- 5) Proactively investigate, collect and interpret information related to nutritional diseases and their management through browsing the internet based professional web sites, medical guidelines & journal databases (MEDLINE, e-library)
- 6) Design prevention, intervention, and educational strategies for individuals and communities to manage acute and chronic wasting disease (e.g; marasmus, kwashiorkor, mixed marasmus-kwashiorkor, and cachexia) and improve health and wellness (Health and wellness promoter)
- 7) Provide prevention, intervention, and educational strategies for individuals and communities to improve nutritional health and wellness

C] Attitudes and behaviors necessary for personal and professional development

Exhibit behaviors and values that are consistent with the trust given to the profession by patients, other healthcare providers, and society (Professional)

- 8) Demonstrate integrity by not cheating and not committing plagiarism
- 9) Demonstrate respect to professors and classmates by observing active listening inside the classroom

Upon successful completion of this course students will be able to:

- 1) **Recall facts, terms, basic concepts, and information regarding: selected micronutrient deficiency syndromes, clinical uses of nutritional therapy, diet-drug interactions and contraindications.**
- 2) **Explain and outline goals of nutritional therapy within the context of diseases' Clinical manifestations and complications of diseases; and within the context of malnutrition and wasting severity.**
- 3) **Identifying malnutrition related problems resorting to gained knowledge and guidelines.**
- 4) **Examine and inspect subjective and objective evidence related to simulated cases to: prioritize patients' wasting severity; recommend appropriate nutritional strategy; and recommend appropriate protein density after correction with non-nutritional calories.**
- 5) **Proactively investigate, collect and interpret information related to nutritional diseases and their management through browsing the internet based professional web sites, medical guidelines & journal databases (MEDLINE, e-library).**
- 6) **Design prevention, intervention, and educational strategies for individuals and communities to manage acute and chronic wasting disease (e.g; marasmus, kwashiorkor, mixed marasmus-kwashiorkor, and cachexia) and improve health and wellness (Health and wellness promoter)**

- 7) Provide prevention, intervention, and educational strategies for individuals and communities to improve nutritional health and wellness.
- 8) Demonstrate integrity by not cheating and not committing plagiarism.
- 9) Demonstrate respect to professors and classmates by observing active listening inside the classroom.

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
An Introduction to Nutrition	1	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Food Groups	1	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Nutritional Facts and Claims	2	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Vegetarian and Mediterranean Diet	2	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Dietary Reference Intakes (DRIs)	2	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Diet Planning Principles	3	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Energy Balance	3	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Respiratory Quotient (RQ)	3	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
BEE Estimation and TER Calculation	4	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Basic Clinical Nutrition Calculation	4	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Anthropometrics and Body Morphology	4	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Weight Loss Concepts	5	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Eating Disorders	5	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Wasting Concepts	5	Clinical Pharmacy Specialist: "MOH'D NOUR"	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references

		BANI YOUNES			provided below
Wasting Severity Assessment_ Anthropometric Data	6	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Wasting Severity Assessment_ Lab Data	6	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Wasting Severity Assessment_ Nutritional Scores	6	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Lipids	7	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Omega Fats and EFAD	7	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Midterm Exam	8				
IVFEs	8	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
NAFLD and PNALD	8	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
IVFEs in PN	8	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Amino Acid (AAs) Part I	9	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Amino Acid (AAs) Part II	9	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Protein Quality	9	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Whey/Casein/Egg/Soy-Proteins	10	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Specialized ENFs	10	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Maximizing Protein Anabolic Potential	10	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Metabolic Response to Uncomplicated Stress	11	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Metabolic Response to Complicated Stress	11	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Philosophy of Anabolism and Catabolism	11	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Philosophy of	12	Clinical Pharmacy	1,2,3,4,5, 6,	Homeworks,	Specified in each lecture.

Nitrogenous Homeostasis		Specialist: "MOH'D NOUR" BANI YOUNES	7,8,9	Quizzes	General references provided below
Philosophy of Fluid Requirement	12	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Micronutrients	12	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Infants Formulas	13	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Metabolic Formulas	13	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
EN in Practice	14	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
TPN in Practice	14	Clinical Pharmacy Specialist: "MOH'D NOUR" BANI YOUNES	1,2,3,4,5, 6, 7,8,9	Homeworks, Quizzes	Specified in each lecture. General references provided below
Final Exam	15				

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:		
ILO/s	Learning Methods	Evaluation Methods
1,2,3,4,5, 6,7,8,9	Lectures, Assignments	Exams, Homeworks, Quizzes

Learning skills:

1. Critical thinking
2. Digital literacy
3. Problem-solving skills
4. Self-directed learning

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:
<ol style="list-style-type: none"> 1. Exams 2. Quizzes 3. Students reports on assignments

23. Course Policies:

A- Attendance policies:
Attendance: Mandatory.

First warning – with 4 absences
Last warning – with 5 absences
Failing in the subject – with 6 absences

B- Absences from exams and handing in assignments on time:

Will result in zero achievement unless health report or other significant excuse is documented.

C- Health and safety procedures:

NA

D- Honesty policy regarding cheating, plagiarism, misbehavior:

The participation, the commitment of cheating will lead to applying all following penalties together

- 1) Failing the subject he/she cheated at
- 2) Failing the other subjects taken in the same course
- 3) Not allowed to register for the next semester. The summer semester is not considered as a semester

E- Grading policy:

Exams and Quizzes.

First Exam:	30 points
Assignment:	20 points
Final Exam:	50 points
Total	100 points

F- Available university services that support achievement in the course:

Classrooms, internet classes

24. Required equipment: (Facilities, Tools, Labs, Training....)

Datashow and internet connection

25. References:

ASPEN/ESPEN/SCCM
Pharmacotherapy: A Pathophysiology Approach 10 e
Understanding Normal and Clinical Nutrition
The Little ICU Book 2017
Clinical Nutrition in Practice
Manual of Clinical Nutrition
Google/PubMed

26. Additional information:

None

Name of Course Coordinator: Dr: "MOH'D NOUR" BAN I YOUNES Signature: *moh'dnour* Date: 8 May 2020

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----