

Course Syllabus

1	Course title	Nutrition Immunity
2	Course number	0603956
3	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4	Prerequisites/corequisites	
5	Program title	PhD in Human Nutrition and Dietetics
6	Program code	031
7	Awarding institution	The University of Jordan
8	School	Agriculture
9	Department	Nutrition and Food Technology
10	Level of course	PhD
11	Year of study and semester (s)	1 st and 2 nd
12	Final Qualification	PhD in Human Nutrition and Dietetics
13	Other department (s) involved in teaching the course	
14	Language of Instruction	English
15	Date of production/revision	March. 2, 2020

16. Course Coordinator: Prof. Hayder A. Al-Domi

Office numbers, office hours, phone numbers, and email addresses should be listed.
034, three hrs a week, 0535000 ext. 22419, h.aldomi@ju.edu.jo.

17. Other instructors:

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

18. Course Description:

The course reviews the fundamental concept of human nutrition, health and immunity; demonstrates how inflammation and immunity disturbances are common in chronic diseases; presents the integrative nutrition approach to identify the underlying causes of inflammatory and immune-related conditions and associated nutritional influences; applies individualized nutrition interventions, as powerful modulators of the pathophysiology of inflammatory and immune responses.

A. Aims:

At the end of this course, students are expected to:

A.1. Nutrition is a critical determinant of immune responses and malnutrition the most common cause of immunodeficiency worldwide. Protein-energy malnutrition is associated with a significant impairment of cell-mediated immunity, phagocyte function, complement system, secretory IgA antibody concentrations, and cytokine production.

A.2. Deficiency of single nutrients also results in altered immune responses: this is observed even when the deficiency state is relatively mild. Of the micronutrients, zinc; selenium; iron; copper; vitamins A, C, E, and B-6; and folic acid have important influences on immune responses.

A.3. Understand that nutrition is a critical determinant of immune responses and malnutrition the most common cause of immunodeficiency worldwide.

A.4. Understand the significant role of malnutrition in substantial impairment of cell-mediated immunity, phagocyte function, complement system, secretory IgA antibody concentrations, and cytokine production.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to

B.1. Demonstrate detailed and advanced level knowledge of certain disease cases with particular emphasis on the role of the immune system in the aetiopathogenetics of certain diseases including obesity, diabetes, autoimmune diabetes, CVDs, and cancer.

B.2. Integrate the role of medical nutrition interventions required for nutritional rehabilitation of certain diseases, and immune factors.

B.3. Develop advanced understanding of the role and interaction of selected nutrients on the immune response and possible consequences of these interactions.

B.4. Elaborate on medical nutrition interventions as well as long term dietary rehabilitation process for selected illnesses.

B.5. Explore the predisposing factors to the aetiopathogenetics of certain diseases, including obesity, diabetes, autoimmune diabetes, CVDs, and cancer as well as AIDS and hypersensitivity diseases.

B.6. Apply basic health, nutrition and medical nutrition interventions principles to special selected diseases and their role in the prevention and amelioration of certain disease with particular focus on immune system integrity.

B. Intellectual Analytical and Cognitive Skills: Student is Expected to

B.1. Develop general mental capabilities involving reasoning, problem solving, planning, abstract thinking, complex idea comprehension, and learning from experience.

B.2. Develop analytical thinking skills that are critical in the workplace, including skills essential for gathering data, solving complex problems, making rational decisions, as well as summarising data and executing well-thought-out projects

B.3. acquire key competences that are needed to meet the challenges of job demands, education, and advanced training, societal expectations, and the demands of everyday life of middle-aged adults

C. Subject- Specific Skills: Students are expected to

C.1. Be able to know-how to undertake the holistic nutrition care process to provide individual patients with proper nutrition support.

D. Transferable Key Skills: Students are expected to

D.1. Master technical, Communication (verbal, non-verbal), critical thinking, multitasking, teamwork, creativity, and leadership transferable skills that will enhance their opportunities in the market place.

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Normal Nutrition Statement on Nutritional Adequacy	1	Prof. Hayder Al-Domi (HD)	A1, A2, B1, C1, D1	Exams, Quizzes, Assignment, and Discussions (EQAD)	Journal articles. See list of references
Nexus between nutrition and the immune system	2, 3	HD	A2, A3, B2, 3, C1, D1	EQAD	
Host specific defense mechanisms	4	HD	A3, B4, C1, D1	EQAD	
Introduction to failure of the Immune System	5	HD	A1, A4, B4, C1, D1	EQAD	
Obesity as a subclinical, low-grad inflammatory Process: Adiposity and adipokines	6, 7		A4, A2, B5, 6, C1, D1	EQAD	
Midterm Exam TBA					
Role of the immune system impairment in the aetiopathogenetics of diabetes	8, 9		A1, A2, B1, C1, D1	EQAD	Journal articles. See list of references
Aetiopathogenetics of Type 1 Immune-Mediated Diabetes: Immunological Implications	10	HD	A2, A3, B2, 3, C1, D1	EQAD	
Failure of the immune system: Cytotoxicity and AIDS	11	HD	A3, B4, C1, D1	EQAD	
Anaphylaxis and allergic responses in humans	12, 13	HD	A3, B4, C1, D1	EQAD	
Journal club and group discussion	14	HD	A1, A4, B4, C1, D1	EQAD	
Review and discussions	14	HD	A1-4, B1-6, C1, D1	EQAD	
Discussion	15	HD	A1-4, B1-6, C1, D1		
Final Exam: TBA					

21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Lectures, group discussions and presentations by students for previously assigned topics (Core Content).
- Seminars and term papers of assigned topics (Acquiring critical thinking skills and independency).
- Text books, Journal articles, handouts, OHT, and PowerPoint presentations as well as web site searching constitute the main teaching tools.

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Discussion, assignment, presentation, quizzes, and exams and publishing high quality papers

23. Course Policies:

A- Attendance policies:

Attendance requirements

- Attendance/Absence Rules and Regulations of the University of Jordan regarding attendance WILL APPLY.
- **Lectures:** Attendance at lectures is **COMPULSORY**.

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

- Attendance/Absence Rules and Regulations of the University of Jordan regarding attendance WILL APPLY.
- If student's attendance exceeded the limit determined by the Rules and Regulations of the University of Jordan (15% of lectures and laboratory sessions assigned for each course) , the student WILL BE DENIED ENTRANCE TO THE RESPECTIVE FINAL EXAMINATION.
- 15% of lectures and laboratory sessions assigned for each course is equivalent to missing 7.2 lectures.
- A student who is denied entrance to the examination due to absences is considered to have failed that course.
- Attendance/Absence Rules and Regulations of the University of Jordan regarding attendance WILL APPLY.
- Students who miss a lab class (because of documented illness/misadventure) must contact their lab supervisor at the earliest opportunity to arrange to attend a later session of the missed lab class, if applicable.
- If no later session is available, the student will be required to undertake a substitute for the missed component.
- In all cases, it is the student's responsibility to discuss missing work with the lab supervisor and to complete the make-up work.

C- Health and safety procedures:

- JU students should also be aware that they are required to abide by the University's Codes, Occupational Health and Safety and Social Justice policies.

D- Honesty policy regarding cheating, plagiarism, misbehaviour:

The Jordan University is committed to academic integrity, honesty and promotion of ethical scholarship. Under the University's Student Code of Conduct, students are expected to:

- act honestly and ethically in the production of all academic work and assessment tasks.
- give recognition to any direct quotes used from other authors or to those authors whose work has made an intellectual contribution to the contents of your work.
- acknowledge shared ownership of ideas in group projects or assessment tasks.
- The University's Student Misconduct Rule defines academic misconduct as "conduct by a student that

in any way undermines or otherwise puts at risk the academic integrity of any course, unit of study or assessment (including examinations) or the University's academic reputation”.

- The acknowledgement of sources underpins all academic work. The JU University take plagiarism and collusion seriously as these are the most common form of academic misconduct.

E- Grading policy:

- Midterm exam (30%),
- lab reports, assignment, discussion, presentation and quiz (20%, and
- final exam (50%).

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

- Concerns or complaints should be expressed in the first instance to the module lecturer; if no resolution is forthcoming, then the issue should be brought to the attention of the module coordinator (for multiple sections) who will take the concerns to the module representative meeting. Thereafter, problems are dealt with by the Department Chair and if still unresolved the Dean and then ultimately the Vice President. For final complaints, there will be a committee to review grading the final exam.
- For more details on University regulations please visit:
<http://www.ju.edu.jo/rules/index.htm>

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

N/A

25. References:

Required book (s), assigned reading and audio-visuals:

- Robert Rich Thomas Fleisher William Shearer Harry Schroeder Anthony Frew Cornelia Weyand. Clinical Immunology. 5th Edition. Elsevier; **ISBN: 9780702068966**
- M. Eric Gershwin (Editor), J. Bruce German (Editor), Carl L. Keen (Editor). Nutrition and Immunology: Principles and Practice. Humana Press.
- M. Eric Gershwin (Editor), Penelope Nestel (Editor), Carl L. Keen (Editor). Handbook of Nutrition and Immunity 2004th Edition. ISBN-10: 1588293084
- American Dietetic Association (ADA) and American Diabetic Association (2003). Exchange Lists for Meal Planning, ADA Chicago.

Recommended books, materials, and media:

- Cresci, G. A. (2015). Nutrition support for the critically ill patient: a guide to practice (No. Ed. 2). CRC Press Inc..
- Weigley, E.S., Mueller,D.H. and Robinson , C.H. et al.(1997) Basic Nutrition and Diet Therapy, 8th edn.,Merrill-Printice Hall, New Jersey.
- Shils, M. E. et al. (2006). Modern Nutrition in Health and Disease, 10th edition. Lippincott Williams and Wilkins, Philadelphia.
- Passmore, R. and Eastwood, M.A.R. (2000). Davidson and Passmore Human Nutrition and Dietetics, 9th ed. E. and S. Livingstone LTD Edimburgh.
- Pellett, and Shadarevian, S. (1970) Food Composition Tables for Use in the Middle East. AUB, Beirut

- Schlenker. Eleanor D., and Long, Sara (2006). Williams Essentials of Nutrition and Diet Therapy, 9th edition, The C.V. Mosby Co., St. Louis.
- British Dietetic Association. (2018). Advanced Nutrition and Dietetics in Nutrition Support. M. Hickson, & S. Smith (Eds.). Wiley Blackwell.
- <https://gi.org/topics/enteral-and-parenteral-nutrition/>
- <http://www.nutritioncare.org/M21/>

26. Additional information:

- Students should be familiar with and required to abide by all University rules, policies processes and codes, related to their studies and time at the University of Jordan.

Name of Course Coordinator: Prof. Hayder Al-Domi -Signature: ----- Date: 4/3/20200

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

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

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

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