جامعة كل العرب

Faculty: *Pharmacy*
Department: Clinical pharmacy and therapeutic department
Academic Year : ٢٠20-٢٠٢1
Semester: First

(Course Syllabus)

Subject Name	Credit Hours	Course No.	Prerequisite	Concurrent course
Biochemistry I	***2***	906212	1501141/ 905120	Biochemistry I Lab 906213

Coordinator Name	Lecturer/s	Room No.	E-mail	Course website	Office Hours
Dr. Sofyan Maghaydah	Sofyan Maghaydah	4210	***s_maghaydah@asu.edu.jo***		**6 hours/week for each lecturer**

Course Description:
The course intended to teach Clinical Nutrition students in the second year level the basics of biochemistry. The course will cover the following topics within 28 lectures of the first semester: amino acids, peptides and proteins, enzymes, carbohydrates, lipids and related compounds, nucleotide and nucleic acids, and vitamins and co-enzymes. Furthermore, the information presented in this course will prepare the student for Human Nutrition course which is given in the second semester of the academic year.

Course Objectives:
1) Realize the biochemical basis of living organisms and life processes.
2) Understand the main concepts regarding the chemical and physical properties of biomolecules (proteins, carbohydrates and lipids).
3) Know the major functions of biomolecules in living organisms.

A. Intended Learning Outcomes:

After studying this course the student should be able to:

A. Knowledge and understanding:

A1) the student will be able to understand all the basic information of biochemistry and biomolecules that play important role in human life and nutrition such as amino acids, proteins, carbohydrates, lipids, nucleotides, vitamins…etc.
A2) The student will be able to appreciate the importance of the science of biochemistry in his daily life as a student and as a nutritionist.
A3) The student will have better understanding of facts and ideas by comparing between biochemistry and other taught courses in clinical nutrition education program.

B. Subject specific skills:

B1) The student will have better understanding of the link between biochemistry and other taught courses in clinical nutrition curriculum.
B2) These foundations have been laid, students then acquire wide-ranging theoretical knowledge, methodological orientation and practical skills in the various sectors of biochemistry.
B3) A major concern of the course is to acquaint students at an early stage with the practical aspects of biochemical laboratory work and to impart to them the knowledge and skills required to pull one's weight in a research team.

C. Cognitive and Intellectual skills:

C1) Correlate the structure of biomolecules to their chemical and physical properties, and influence on biological function.

C2) Predict the direction of a reaction according to the given bioenergetics data.

C3) An ability to critically evaluate information and data from a variety of sources, to interpret quantitatively and qualitatively scientific information, and to explain complex scientific ideas in written, visual and oral forms.

C4) An ability to assess the value and limitations of existing knowledge and experimental techniques.

D. Transferable Skills:

D1) Develop the key practical skills and technical competencies required to become a scientist in areas that include clinical nutrition and research.

D2) Learn how to apply advanced numerical skills and statistical analysis to solve problems involving biological data, and to write up findings accurately, clearly and concisely, in the appropriate style.

D3) Provide numerous opportunities to develop a broad range of transferable skills that are keenly sought after by potential employers, both within the bioscience sector and beyond.

Teaching and Learning Methods:

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

ILOs	Learning Methods	Evaluation Methods
A1 -A3 B1 -B2 C1 -C3	Lectures (to explain the theoretical knowledge for each topic)	First, second and final Exams
B3,C4 D1 - D3	Discussion (to apply the knowledge to clinical biochemistry)	Not applicable
B3,C4 D1 - D3	Role plays (to apply the knowledge to solve patient cases) in the virtual nutrition	Not applicable

Learning skills:

1. Critical thinking
2. Problem-solving skills

Course Content:

Week	*Date*	*Lecture number*	*Topic's Details*	*Exams/ /quizes/ holidays*	*Main Reference (chapter)*	*ILOs achieved*
1		1-2	Introduction to biochemistry: Chemical basis of life processes.		Lippincott"s Biochemistry	**A1-A2**
2		3-4	Amino acids: name and chemical structures, acid-base properties and acid – base titration.		Lippincott"s Biochemistry Ch.1	B3,C4 D1 - D3
3		5-6	Peptides and proteins: peptides as a basic structure of proteins, protein structural elements (primary, 2ndary, tertiary, quaternary)		Lippincott"s Biochemistry Ch. 2	A1 -A3 B1 -B2 C1 -C3
4		7-8	Physical and chemical properties of proteins. Types of proteins: fibrous and globular proteins		Lippincott"s Biochemistry Ch.3, Ch. 4	B3,C4 D1 - D3
			FIRST EXAM			
5-6		9-12	Enzymes: classifications, catalytic properties, enzyme kinetics, regulation of enzyme activity.		Lippincott"s Biochemistry Ch.5	A1 -A3 B1 -B2 C1 -C3
7-8		13-16	Carbohydrates: chemical and structural properties of carbohydrates.		Lippincott"s Biochemistry Ch.11,Ch13, Ch.14	B3,C4 D1 - D3
9		17-18	Nucleotides and nucleic acids: importance of nucleic acids and nucleotides in the cell. Chemical and structural properties of nucleotides, DNA and RNA.		Lippincott"s Biochemistry Ch.29,Ch30,Ch31	A1 -A3 B1 -B2 C1 -C3
			SECOND EXAM			
10-11-12		19-24	Lipids and related compounds: types, chemical and structural properties of lipids and related compounds.		Lippincott"s Biochemistry Ch.16, Ch.17	A1 -A3 B1 -B2 C1 -C3
13		25-27	Vitamins and Co-enzymes: types, chemical and structural properties and cellular importance.		Lippincott"s Biochemistry Ch.28	B3,C4 D1 - D3
14		28-29	Introduction to hormones: types and function of hormones.		Lippincott"s Biochemistry Ch.24	B3,C4 D1 - D3
15			Review			
			FINAL EXAM			

Grade Distribution:

Assessment Method	*% of Final Grade*	*Due Date*
First exam	25%	TBD
Second exam	25%	TBD
Final exam	50%	TBD

Course Policies:

A- Attendance policies:
Attendance: Mandatory.
First warning – with 4 absences
that Final warning at 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:
N/A

D- Honesty policy regarding cheating, plagiarism, misbehavior:
According to University rules.

E- Grading policy:
Exams and Quizzes.

First Exam:	**25 points**
Second Exam	**25 points**
Assignments/quizzes:	**0 points**
Final Exam:	**50 points**
Total:	**100 points**

F- Available university services that support achievement in the course:
Classrooms, workshop room.

Required equipment:

Data show and internet connection

Make-up Exam Policy:

Make-up exams will be offered for valid reasons. They may be different from regular exams, both in content and format.

Textbooks information:

Main Reference:

- Biochemistry, Lippincotts Illustrated Review. Champe, P.C., Harvey, R.A. and Ferrier, D.R., 7th Edition. Lippincotts Williams & Willkins 2017.

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Other References:

- Marks' Basic Medical Biochemistry: A Clinical Approach, 5th Edition **by Michael Lieberman, Allan Marks, Alisa Peet**, July 2017

Additional information:

No side talks during lecture
No mobile phones during lecture
Entering the lecture theatre after the instructor is not permitted.

Homework should be done by students independently and will be asked at the exams

Course Material and Announcements
Students need to use the e-learning page at the ASU website in order to get all lecture hand-outs and guidelines which wi be uploaded there.
In addition, course related announcements and exam results will be posted on the e-learning page and is the responsibilit of each student to check the site regularly.

Name of Course Coordinator: Dr. Sofyan Maghaydah Signature:
Date: 18 / 10 / 2020

Head of curriculum committee: Reem Abutayeh Signature: د. ريم ابوتايه

Head of Department: Sofyan Maghaydah **Signature:**

Dean: Prof. Iman Basheti Signature:

Copy to:

Head of Department
Head of curriculum committee
Course File