Jordan University of Science and Technology
Faculty of Applied Medical Sciences
Department of Medical Laboratory Sciences
Course Syllabus LM721

Course Information	
Course Title	Medical biochemistry (3 credit hours)
Course Code	LM 721
Prerequisites	NA
Course Website	www.Iww.com
Instructor	Professor Nabil Bashir, Ziad Jraisat, and Dr. Saleem Bani Hani
Office Location	M5 level - 4
Office Phone #	23874
Office Hours	TBA
E-mail	-
Teaching Assistant(s)	NA

Course Description

This course is an advanced course in biochemistry for master's students. Topics include the structure, function, and metabolism of the main macromolecules in the human body (proteins, enzymes, carbohydrates, lipids, nonprotein nitrogen compounds, nucleic acids, vitamins, and other specialized products). The course is also includes a description of the biochemistry of selected common human diseases.

Textbook	
Title	Textbook of biochemistry with clinical correlations
Author(s)	Thomas M. Devlin
Publisher	WILEY
Year	2011
Edition	Seventh edition
Other references	Handouts

Assessment		
Assessment	**Expected Due Date**	**Percentage**
First Exam	5th week of the semester	25%
Second Exam	10th week of the semester	25% + 10% Presentation
Final Exam	As determined by registrar	40%

Course Objectives	Percentage
. 1. To present a clear and precise discussion of the molecular basis of life of eukaryotic cells, with an emphasis on those of human tissues.	50%
. 2. To relate the biochemical processes at the cellular level to the physiological processes of the whole human body.	25%
. 2. To illustrate how biochemistry research has led to an understanding of the causes of various human diseases.	25%

Teaching & Learning Methods

- Lecture with discussion
- Brainstorming
- Case studies
- Problems solving

Teaching duration: 16 weeks

Objective	Reference(s) Handouts
1, 3	Chapters: 10, 11, 14, 15, 16, 17, 23, 26,27 + Handouts
2, 4	Chapters: 1, 16 + Handouts
5, 6	Handouts

Useful Resources

University library, Internet, Articles (assigned by the instructor)

Course Content (lectures)		
Week	**Topics**	**Chapter in Textbook (handouts)**
1	Introduction to medical biochemistry: basic chemistry of carbohydrates, proteins, lipids, and Nucleic acids.	**1 Handouts**
2	Buffer systems	**1 Handouts**
3	Protein structure	**3 Handouts**
4	Enzymes, Coenzymes, vitamins	**10 Handouts**
5	Enzyme kinetics	**10 Handouts**
6	Carbohydrate metabolism- *regulation of blood glucose*	**15, 16, 22 Handouts**
7	TCA, Oxidative phosphorylation *Formation of reactive oxygen species, antioxidants, and oxidative stress.*	**14 Handouts**
8	Metabolism of lipids	**17, 18 Handouts**
9	Metabolism of cholesterol	**18 Handouts**
10	Urea metabolism	**19 Handouts**
11	Nucleic acid metabolism	**20 Handouts**
12	Conversion of amino acids to specialized products; heme, creatinine.	**19 Handouts**
13	Nucleotide metabolism	**20 Handouts**
14	Vitamins and minerals	**26 Handouts**
15	Review	
16	Final Exam	

Additional Notes
Attendance policy The students are required to attend all the classes. Absence for more than 15% of the classes without acceptable excuses will lead to dismissal from the course. If it is an emergency (unplanned) absence, the student is still required to provide an acceptable excuse. **Expected workload:** The student must attend the classes, solve the assignment, prepare for the group discussions, and attend and pass the exams. Each student must make a presentation in one of the biochemistry topics assigned by the instructor. **Feedback:** Any feedback from the students regarding the progression in the course can be discussed with the instructor (Dr.Nabeel Albasheer) at the assigned office hours:

Course Content		
Week	**Title of the Lecture**	**Lecturer**
1	Introduction to medical biochemistry: basic chemistry of carbohydrates, proteins, lipids, and Nucleic acids.	Prof. Nabil Bahsir
2	Buffer systems	Prof. Nabil Bahsir
3	Protein structure	Prof. Nabil Bahsir
4	Enzymes, Coenzymes, vitamins	Prof. Nabil Bahsir
5	Enzyme kinetics	Prof. Nabil Bahsir
6	Carbohydrate metabolism- *regulation of blood glucose*	Prof. Nabil Bahsir
7	TCA, Oxidative phosphorylation *Formation of reactive oxygen species, antioxidants, and oxidative stress.*	Prof. Nabil Bahsir
8	Metabolism of lipids	Prof. Nabil Bahsir
9	Metabolism of cholesterol	Prof. Nabil Bahsir
10	Urea metabolism	Prof. Nabil Bahsir
11	Nucleic acid metabolism	Prof. Nabil Bahsir
12	Conversion of amino acids to specialized products; heme, creatinine.	Prof. Nabil Bahsir
13	Nucleotide metabolism	Prof. Nabil Bahsir
14	Vitamins and minerals	Prof. Nabil Bahsir
15	Review	Prof. Nabil Bahsir
16	Final Exam	

This book presents a clear and precise discussion of the biochemistry of eukaryotic cells, particularly those of mammalian tissues, relates biochemical events at a cellular level to the subsequent physiological processes in the whole animal, and cites examples of abnormal biochemical processes in human disease. The organization and content are tied together to provide students with the complete picture of biochemistry and how it relates to human diseases.Â The organization and content are tied together to provide students with the complete picture of biochemistry and how it relates to human diseases. Related Resources. Instructor. Completely updated from its previous edition published in 2001, this textbook includes the latest scientific research on the biochemistry of mammalian cells; detailed exami-nation on the relationship between events at the cellular level to the subsequent physi-ological processes in the whole animal; and examples of human diseases derived from aberrant biochemical processes. The book features: more than 1,200 high-quali-ty, full color illustrations; over 250 clinical correlations that explain the relationship between biochemical con-cepts and human diseases; questions with explained answers at... 5th edition. â€" Wiley-Liss, 2002. â€" 1242 p. â€" ISBN 978-0471411369. This newly revised and updated fifth edition of Devlin s Textbook of Biochemistry with Clinical Correlations presents the biochemistry of mammalian cells, relates events at the cellular level to physiological processes in the whole animal, and cites examples of human diseases derived from aberrant biochemical processes. This edition significantly expands the clinical correlation that highlight the significance of biochemistry to specific clinical problems. Fullâ€“color illustrations provide clear explanations for the concepts discussed, and endâ€“ofâ€“chapter questions and answers act as challenging study material. Request PDF | On Jul 1, 2002, James Zimmerman published Textbook of biochemistry: With clinical correlations (5th ed.): Devlin, Thomas M. (ed.) | Find, read and cite all the research you need on ResearchGate.Â Biochemistry and Molecular Biology Education 30(4):274 - 274. DOI:10.1002/bmb.2002.494030049994. Authors Includes illustrations, clinical correlations, and review questions. Previous edition: c1997. â€“This text refers to an out of print or unavailable edition of this title. The publisher, John Wiley & Sons.Â This newly revised and updated fifth edition of Devlinâ€™s Textbook of Biochemistry with Clinical Correlations presents the biochemistry of mammalian cells, relates events at the cellular level to physiological processes in the whole animal, and cites examples of human diseases derived from aberrant biochemical processes. This edition significantly expands the clinical correlation that highlight the significance of biochemistry to specific clinical problems.