Course Plan for Bachelor Program - Study Plan Development and Updating Procedures/ Pharmacy Department	QF02/0408-4.0E

Study Plan No.	**2021/2022**		**University Specialization**		**Bachelor of Nursing**	
Course No.	**0201163**		**Course Name**		**Biochemistry for Nurses**	
Credit Hours	**2**		**Prerequisite *Co-requisite**		**General Chemistry**	
Course Type	☐ Mandatory University Requirement	☐ University Elective Requirement	☑ **Faculty Mandatory Requirement**	☐ Support course family requirements	☐ Mandatory Requirement	☐ Elective Requirement
Teaching Style	☐ Full Online Learning		☑ **Blended Learning**		☐ Traditional Learning	
Teaching Model	☐ 1 Synchronous: 1 Asynchronous		☑ **1 Face to Face: 1 Asynchronous**		☐ 2 Traditional	

Faculty Member and Study Divisions Information *(to be filled in each semester by the subject instructor)*

Name	Academic rank	Office No.	Phone No.	E-mail	
Office Hours (Days/Time)	**Sunday, Tuesday, Thursday ()**		**Monday, Wednesday ()**		
Division number	**Time**	**Place**	**Number of Students**	**Teaching Style**	**Approved Model**
				Blended Learning	**1 Face to Face: 1 Asynchronous**

Brief Description

This course provides an overview of the key aspects of biochemistry by relating molecular interactions to their effects on the human body as a whole. Topics addressing protein structure, protein function include enzyme kinetics, the biochemical aspects of protein, carbohydrate and lipid metabolism, with emphasis on their interrelations, as well as their homeostatic regulation.

Learning Resources

Course Book Information (Title, author, date of issue, publisher ... etc)	1.Marks, Marks and Smith. Basic Medical Biochemistry. 3rd Edition (2003). Lippincott Williams & Wilkins.			
Supportive Learning Resources (Books, databases, periodicals, software, applications, others)	1.Chemistry for the Health Sciences. 8th Edition, edited by Sackheim and Lehman, 2000, Macmillan Publishing Company. 2. Champe and Harvey. Biochemistry: illustrated reviews. 3rd Edition (2004). Lippincott Williams & Wilkins.			
Supporting Websites				
The Physical Environment for Teaching	☑ **Class room**	☐ Labs	☑ **Virtual Educational Platform**	☐ Others
Necessary Equipment and Software	- **PC/laptop with headphones and camera** - **Microsoft Office.** - **Microsoft teams.**			

	- **Moodle.**
Supporting People with Special Needs	
For Technical Support	**E-learning &Open Educational Resources Center** **E-mail: elearning@zuj.edu.jo Phone: +962 6 4291511 ext. 425/362.**

Course learning outcomes *(K= Knowledge, S= Skills, C= Competencies)*

No.	Course Learning Outcomes	The Associated Program Learning Output Code
Knowledge **The student should be able to:**		
K1	Delineate structure, function & interrelationship of various biomolecules (Proteins, carbohydrate, lipids and nucleic acid)	**MK1**
K2	Summarize the fundamental aspects of enzymology & clinical applications	**MK1**
K3	Discuss the main concepts of bioenergetics and oxidative phosphorylation of biomolecules.	**MK1**
K4	Describe the major pathways involved in carbohydrates, lipids & proteins metabolism and their homeostatic regulation.	**MK1**
K5	Explain metabolic effects of insulin (in well-fed state) and glucagon (in stress-state).	**MK1**
Skills **The student should be able to:**		
S1	Relate the biochemical events at the cellular level to the physiological processes occurring in the whole body.	**MS1**
S2	Integrate metabolic pathways of the three major dietary components and analyze the complete integrated metabolic map.	**MS1**
S3	Interpret metabolic abnormalities and relate them to possible causes and mechanisms.	**MS1**
Competencies **The student should be able to:**		
C1	Develop student professional and personal performance by following up on lectures, completing assignments on time, and the ability to be self-motivated learners and responsive to feedback.	**MC1**

Mechanisms for Direct Evaluation of Learning Outcomes

Type of Assessment / Learning Style	Fully Electronic Learning	Blended Learning	Traditional Learning (Theory Learning)	Traditional Learning (Practical Learning)
Midterm Exam	30%	**30%**	30%	0%
Participation / Practical Applications	0%	**0%**	20%	50%
Asynchronous Interactive Activities	20%	**20%**	0%	0%

Final Exam	50%	**50%**	50%	50%

Note 1: *Asynchronous interactive activities are activities, tasks, projects, assignments, research, studies, projects, and work within student groups ... etc, which the student carries out on his own, through the virtual platform without a direct encounter with the subject teacher.*

Note 2: *According to the Regulations of granting Master's degree at Al-Zaytoonah University of Jordan, 40% of final evaluation goes for the final exam, and 60% for the semester work (examinations, reports, research or any scientific activity assigned to the student).*

Schedule of Simultaneous / Face-to-Face Encounters and their Topics

Week	Subject	Learning Style*	Reference **
1	Introduction to the coarse and Revision to functional groups in chemistry	**Lecture**	Biology (chemistry of organic molecules). Mader, 10th edition
2	Introduction to the coarse and Revision to functional groups in chemistry	**Lecture**	Biology (chemistry of organic molecules). Mader, 10th edition
3	Amino acids: Structure, chemical and physical properties	**Lecture**	Champe and Harvey. Biochemistry: illustrated reviews. 3rd Edition (2004). Lippincott Williams & Wilkins.
4	Amino acids: Structure, chemical and physical properties	**Lecture**	Champe and Harvey. Biochemistry: illustrated reviews. 3rd Edition (2004). Lippincott Williams & Wilkins.
5	Classification of proteins according to shape, colloidal nature and denaturation	**Lecture**	Champe and Harvey. Biochemistry: illustrated reviews. 3rd Edition (2004). Lippincott Williams & Wilkins.
6	Classification of proteins according to shape, colloidal nature and denaturation	**Lecture**	Champe and Harvey. Biochemistry: illustrated reviews. 3rd Edition (2004). Lippincott Williams & Wilkins.
7	Buffers: Definition, constituents, and clinical correlation	**Lecture**	Marks, Marks and Smith. Basic Medical Biochemistry. 3rd Edition (2003). Lippincott Williams & Wilkins.
8	Buffers: Definition, constituents, and clinical correlation	**Lecture**	Marks, Marks and Smith. Basic Medical Biochemistry. 3rd Edition (2003). Lippincott Williams & Wilkins.
9	Factors affecting enzyme activity, inhibition of enzymes, regulation of enzymes, and clinical correlation **Midterm Exam**	**Lecture**	Marks, Marks and Smith. Basic Medical Biochemistry. 3rd Edition (2003). Lippincott Williams & Wilkins.
10	Factors affecting enzyme activity, inhibition of enzymes, regulation of enzymes, and clinical correlation	**Lecture**	Marks, Marks and Smith. Basic Medical Biochemistry. 3rd Edition (2003). Lippincott

			Williams & Wilkins.
11	Lipids: Definition, classification and function, fats, fatty acids, Clinical correlation: Biologically active fatty acid-derived compounds	**Lecture**	Champe and Harvey. Biochemistry: illustrated reviews. 3rd Edition (2004). Lippincott Williams & Wilkins.
12	Lipids: Definition, classification and function, fats, fatty acids, Clinical correlation: Biologically active fatty acid-derived compounds	**Lecture**	Champe and Harvey. Biochemistry: illustrated reviews. 3rd Edition (2004). Lippincott Williams & Wilkins.
13	Digestion and absorption: Salivary digestion, gastric digestion, intestinal digestion, and role of pancreatic, bile and intestinal juices in digestion	**Lecture**	Sackheim and Lehman. Chemistry for the Health Sciences. 8th Edition (2000) Macmillan Publishing Company
14	Digestion and absorption: Salivary digestion, gastric digestion, intestinal digestion, and role of pancreatic, bile and intestinal juices in digestion	**Lecture**	Sackheim and Lehman. Chemistry for the Health Sciences. 8th Edition (2000) Macmillan Publishing Company
15	Carbohydrate, lipid, protein metabolism	**Lecture**	Sackheim and Lehman. Chemistry for the Health Sciences. 8th Edition (2000) Macmillan Publishing Company
16	**Final Exam**		

** Learning styles: Lecture, flipped learning, learning through projects, learning through problem solving, participatory learning ... etc.*
*** Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.*

Schedule of Asynchronous Interactive Activities *(in the case of e-learning and blended learning)*

Week	Task / Activity	Reference	Expected Results
1	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
2	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
3	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
4	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
5	Self-study	A selected topic	Assignment
6	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
7	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
8	Self-study	A selected topic	Assignment
9	**Midterm Exam**	-	-
10	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment

11	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
12	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
13	Self-study	A selected topic	Assignment
14	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
15	Watch a recorded lecture	Video on the E-learning platform	Answer questions embedded in the video / Assignment
16	**Final Exam**	-	-