



Department of Biology and Biochemistry
Nutritional Biochemistry
BIOC231

Course Outline (Syllabus)

Semester: Fall 2021/2022

Course Instructor: Dr. Wasif Al-Shareef

Lecture times:

Day	Tuesday	Wednesday
Time	08:30-10:00	08:30-10:00

Office Hours:

Day	Tuesday	Wednesday
Time	10:00-11:00	10:00-11:00

Course Description:

This course is a comprehensive survey of the structure and function of macromolecules: carbohydrates, proteins, lipids and nucleic acids. Enzyme kinetics and the kinetics of oxygen-binding proteins are also discussed. To understand the biological processes, you need a strong background in chemistry, biology, and organic chemistry.

Text Book

1. Principles of Biochemistry: (6th edition, by Lehninger, Nelson, Cox; 2016).
2. Nutritional Biochemistry: (1st edition, by D.C. Sharma / Devanshi Sharma, 2015).

Evaluation:

First Hour Exam: 25%

Second Hour Exam: 25%

Participation (assignment): 10%

Final Exam: 40%

Rules and Regulations:

Students must strictly adhere to Berzeit University rules and regulation regarding lectures and exams attendance, plagiarism, and dishonesty.

Topics to be covered

Week #	Topics to be covered
1	Introduction: The foundations of biochemistry (cellular, chemical, physical, and genetic).
3	Chemistry of Amino Acids and Proteins
4	Chemistry of Carbohydrates
5	Enzymes
6	Chemistry of Lipids
7	Vitamins and Minerals
8	Carbohydrate Metabolism - Glycolysis, Citric Acid Cycle, Pentose Phosphate Pathway, Gluconeogenesis, Glycogenolysis
10	Lipids Metabolism - Beta Oxidation, Fatty Acid Synthesis, Cholesterol
11	Amino Acid Metabolism - Urea cycle, Glucogenic and Ketogenic amino acids
12	Biological Oxidation (the Electron Transport Chain)
13	Hormonal regulation of fuel metabolism