



# Faculty of Medicine

Major: Doctor of Medicine

Academic Year: 2023/2024

Subject: Biochemistry 1

## COURSE SYLLABUS

Student's Copy



## 1. Course information:

| Theory               |                        | Practical            |   |
|----------------------|------------------------|----------------------|---|
| Course Title:        | Biochemistry 1         | Course Title:        | - |
| Course Code:         | 1002132                | Course Code:         | - |
| Co-Requisite:        | -                      | Co-Requisite:        | - |
| Prerequisite:        | -                      | Prerequisite:        | - |
| Course Credit Hours: | 2                      | Course Credit Hours: | - |
| Class Location:      | Lecture rooms 1,2      | Class Location:      | - |
| Department:          | Basic Medical Sciences |                      |   |
| Final Qualification: | Doctor of Medicine     |                      |   |

## 2. Instructor Contact Information:

|                |   |
|----------------|---|
| Coordinator:   | Prof. Dr. Ayman Elbaz   |
| Instructor(s): | Prof. Dr. Ayman Elbaz<br>Dr. Samia Hussein  |
| Email:         | aymanmoustafa@isums.edu.jo<br>Samiamohammed@isums.edu.jo  |
| Office:        | Faculty of Medicine, Office of Dean of Medicine<br>Residency Building, Ground Floor, Office of Dean of Scientific<br>Research |
| Office Hours:  | Sunday, Monday, Tuesday, Wednesday, and Thursday<br>(1:00-2:00 pm)  |



3. **Course Description:** Medical Biochemistry 1 deals with the structure, derivatives and functions of carbohydrates, lipids, protein, minerals and vitamins. Also, the role of enzymes in metabolism is discussed with regards to the structure, the types and the kinetics of enzymatic reactions

4. **Resources Available to Students:**

Handout of the University

Lippincott (Illustrated Review Series) Biochemistry 7<sup>th</sup> edition

Harpers Illustrated Biochemistry 32<sup>nd</sup> edition

5. **Teaching Methods**

- a. Lectures.
- b. Case-based learning.
- c. Discussion and problem solving.
- d. Individual and groups activities.
- e. In-class competition.

6. **Intended Learning Outcomes (ILOs):**

**Upon successful completion of this course students will be able to ...**

1. Differentiate between mono-, di-, and poly saccharides.
2. Describe the structure and function of simple lipids, compound lipids, and derived lipids
3. Recognize the structure of protein and related diseases
4. Understand the mechanism of action and inhibition of enzymatic action
5. Integrate the elevation of isoenzymes in diagnosis of several diseases
6. Integrate the regulation of major elements to diseases.
7. Apply the role of trace elements in metabolism.
8. Diagnose fat soluble-vitamin deficiency
9. Define causes and manifestations of water-soluble vitamin deficiency
10. Differentiate between different types of anemias related to vitamin deficiency.



## 7. Course Policies:

**To be explained to students at the first meeting:**

### 1. Attendance Policies:

#### A. Attendance Policy (absences and tardiness for a traditional course):

- a. Students must attend all classes of this course.
- b. Any student with an absence of 15% of the classes of any course, will be illegible to sit for the final exam and will result in a failing grade being assigned in this course.
- c. Excused absences include documented illness, deaths in the family, and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have valid excuses. Consideration will also be given to students whose dependent children experience serious illnesses.
- d. Students with a legitimate reason to miss a required activity must request an approved absence through Student Academics. Unexcused absence from a scheduled examination or quiz may result in (0 %) being assigned for that assessment. Unexcused absence from an activity for which attendance is may be considered an issue of Professionalism.
- e. Any student who arrives late will not be allowed to attend the class and will be marked absent.

#### B. Exam Attendance:

- a. A student who is more than 10 minutes late, will not be permitted to submit the exam.
- b. A student who is late more than 30 minutes will not be permitted to submit the final exam, and no student will be permitted to leave the exam center before the elapse of 30 minutes.

### 2. Exams Policies:

- a. Students are expected to take their exams on time and as scheduled by their instructors.



- b. Student who are unable to take (quiz, midterm or final) exam due to any reason should contact their instructor immediately.
  - c. Make-up exams are of the responsibility of faculty committee.
  - d. A final exam, paper, or project is required in all courses.
  - e. Seminars and workshops are included in evaluation criteria.
  - f. Only registered undergraduate and graduate credit students are allowed to take final exams.
  - g. If you are unable to take the final exam at the scheduled time without any acceptable excuse, you may not be allowed to rearrange the final exam separately (Make-up).
  - h. If you attend the final exam and do not submit the exam sheet, or do not complete the exam for any reason, you are not allowed to complete the final exam at another time or appeal for a final make-up exam and will be assigned failing for the final exam.
  - i. If you do not take your final exam and did not withdraw from the course by the withdrawal deadline you will assign a failing grade for the final exam.
- 3. Cheating Policies:** Cheating is officially defined as giving or attempting to give, obtaining or attempting to obtain, information relative to an examination or other work that the student is expected to do alone and not in collaboration with others, or the use of material or information restricted by the instructor. Plagiarism is no lesser an offense than cheating, it means repeating another's sentences as your own, adopting a particularly apt phrase as your own, paraphrasing someone else's argument as your own, and presenting someone else's line of thinking in the development of a thesis as though it were your own.
- 4. Penalty for cheating and plagiarism:** The failing grade, shall be assigned for that piece of work to any students cheating or plagiarizing.
- 5. Mobiles:** Mobile phones should be kept turned off or silent while in class. Usage of mobile phones is not allowed in classes in any form (talking and/or texting).



## 8. Course Grading System:

| Assessment Tools              | Weight (100%) | Description |
|-------------------------------|---------------|-------------|
| Exams (Midterm and Final)     | 100%          | - MCQs      |
| Quizzes and other assessments | 0%            | - MCQs      |

## 9. Course Outlines/ Schedule:

| Week | Topic                            | Chapter                | Reference | Estimated number of hours | Teaching method      |                        | ILOs |
|------|----------------------------------|------------------------|-----------|---------------------------|----------------------|------------------------|------|
|      |                                  |                        |           |                           | Theoretical Lectures | Practical Laboratories |      |
| 1    | Monosaccharides                  | Carbohydrate Chemistry |           | 2                         | √                    |                        | 1    |
| 2    | Disaccharides                    | Carbohydrate Chemistry |           | 2                         | √                    |                        | 1    |
| 3    | Polysaccharides                  | Carbohydrate Chemistry |           | 2                         | √                    |                        | 1    |
| 4    | Simple lipids<br>Compound lipids | Lipid chemistry        |           | 2                         | √                    |                        | 2    |
| 5    | Amino acids<br>Protein           | Protein chemistry      |           | 2                         | √                    |                        | 3    |



|    |  |                   |  |   |   |  |    |
|----|--|-------------------|--|---|---|--|----|
| 6  | Protein folding                            | Protein chemistry |  | 2 | √ |  | 3  |
|    | Structure of enzymes                       | Enzymes           |  |   | √ |  | 4  |
| 7  | Mechanism of action                        | Enzymes           |  | 2 | √ |  | 4  |
|    | Factors affecting activity+ inhibition     |                   |  |   | √ |  | 4  |
| 8  | Mid-term exam                              |                   |  |   |   |  |    |
| 9  | Isoenzymes                                 | Enzymes           |  | 2 | √ |  | 5  |
|    | Enzymes of clinical importance             |                   |  |   | √ |  | 5  |
| 10 | Major elements                             | Minerals          |  | 2 | √ |  | 6  |
|    | Major elements                             |                   |  |   | √ |  | 6  |
| 11 | Minor elements                             | Minerals          |  | 2 | √ |  | 7  |
|    | Minor elements                             |                   |  |   | √ |  | 7  |
| 12 | Fat soluble Vitamins (A, D, E, K)          | Vitamins          |  | 2 | √ |  | 8  |
| 13 | Water soluble Vitamins (C, B1, B2, B3, B5) | Vitamins          |  | 2 | √ |  | 9  |
| 14 | Vitamins (B7, B9, B12)                     | Vitamins          |  | 2 | √ |  | 10 |
| 15 | Revision                                   |                   |  |   |   |  |    |
| 16 | Final exam                                 |                   |  |   |   |  |    |