Course plan

Year: 2025	**Semester:** ■First, □Second, □Summer	**Number of students: 6**
Major: Master's Degree in Clinical Biochemistry	■ Basic sciences, □ Physiopathology	**Department:** Clinical Biochemistry
Course Title: Enzymology	■Theoretical, □Practical	**Credit:** ۲ credits **Code N:** ۱۰
Prerequisite: _____	**Day & Time:** Wednesday: ۱۰-۱۲	**Course type:**
Instructor:	**Office address:**	**Tel:**
Email: ali.noori1371@gmail.com	**Response Hours and Days:**	**Student representative name and mobile number:**

Main objective: Introducing students to the structure, function, kinetics, influencing factors, and mechanism of enzymes, and the clinical applications of enzymes in diagnosis and treatment.

References (Text books):

References for this Course:

1. Tietz Text Book of Clinical Chemistry and Molecular Diagnostics Edited by Carl. A. Burtis, Edward R. Ashwood and David E. Bruns, United States: Elsevier Health Sciences. (Last edition)
2. Garrett, R. H ., Grisham, C. M. Biochemistry. United States: Cengage Learning. (Last edition)
3. Hoskins, A. A ., Cox, M ., Nelson, D. L. Lehninger, Principles of Biochemistry: International edition.

Student evaluation and the value related to each evaluation:

(The assessment tools that will be used to test student ability to understand the course material and gain the skills and competencies stated in learning outcomes)

ASSESSMENT TOOLS	From
Assignments	1
Presence in online courses	۱
Final Exam (Written exam)	۱۸
TOTAL MARKS	**20**

Students responsibilities:

1- Mobile phones must be turned off during class or exams.

2- Attending class on time

3- It is necessary for the student to attend all class hours. Unexcused absence during the course will result in a grade deduction.

Discipline and educational rules:

It is applied according to the regulations of the educational regulations

Row	date	Time	Topic	Professor
1&2	Wednesday	10-12	Introduction, history of enzyme study, enzyme structure and active site; isoenzymes, naming, classification, and characteristics.	Dr.Nouri
3	Wednesday	10-12	Overall properties of enzymes.	Dr.Nouri

4	Wednesday	10-12	Coenzymes, cofactors, and prosthetic groups.	Dr.Nouri
5&6	Wednesday	10-12	Molecular interactions and types of enzyme reaction mechanisms; protein-ligand binding studies.	Dr.Nouri
7	Wednesday	10-12	Enzyme reaction kinetics and influencing factors like temperature, pH, concentration, etc.	Dr.Nouri
8&9	Wednesday	10-12	Concepts related to enzyme efficiency: Km, kcat, Turnover Number, etc. Enzyme activity assessment.	Dr.Nouri
10	Wednesday	10-12	Isolation and purification of enzymes for use in laboratory kits with a focus on initiating knowledge-based businesses.	Dr.Nouri
11	Wednesday	10-12	Types of enzyme inhibitors and their medicinal applications.	Dr.Nouri
12	Wednesday	10-12	Regulation of enzyme activities.	Dr.Nouri
13&14	Wednesday	10-12	Applications of enzymes in disease treatment.	Dr.Nouri
15	Wednesday	10-12	Familiarity with enzyme kinetics calculation software	Dr.Nouri
16&17	Wednesday	10-12	An introduction to the clinical significance of enzymes: muscular, hepatic, bone-related, cardiac enzymes.	Dr.Nouri