

# TEMPLATE FOR COURSE SPECIFICATION

## HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

### COURSE SPECIFICATION

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available learning opportunities. It must be linked to the description of the program.

١. Teaching Institution	Kirkuk University/ College of Veterinary Medicine
٢. University Department/Centre	Department of Physiology, biochemistry and Pharmacology
٣. Course title/code	Biochemistry /CVM٢١٠٤/ CVM٢٢٠٤
٤. Modes of Attendance offered	Second year students
٥. Semester/Year	Second year / first and second semesters( ٢٠٢٠-٢٠٢١)
٦. Number of hours tuition (total)	٧٥ hours /First semester ٧٥ hours /Second semester
٧. Date of production/revision of this specification	١١/٩/٢٠٢٠
٨. Aims of the Course	
١. Acquaintance with the basic principles of biochemistry.	
٢. Identify the metabolism of food that enters the animal feed.	
Biochemistry is one of the basic medical sciences whose knowledge crystallizes in the applied medical sciences (internal medicine, surgery and obstetrics).	

## 9. Learning Outcomes, Teaching ,Learning and Assessment Methods

### A- Cognitive goals

A<sub>1</sub>- Teaching the student the concept of biochemistry and its general principles

A<sub>2</sub>- Knowledge, understanding and comprehension of the scientific subject curriculum

A<sub>3</sub>- To classify the theoretical and practical needs for the development of learning and teaching in the appropriate manner with the scientific material

A<sub>4</sub>- Identifying the composition of the chemical substances in the animal's body.

A<sub>5</sub> - Identify the methods of metabolism of substances (carbohydrates, proteins and fats)

A<sub>6</sub>- Studying the structure and classification of hormones and their relationship to the life cycle of an animal and its relationship to the body's biological interactions.

A<sub>7</sub>- Studying the structure of enzymes, their mechanism of action and their effect on chemical reactions.

### B - Skills objectives of the course.

B<sub>1</sub> - Teaching the student how to draw blood.

B<sub>2</sub> - Teaching the student the methods of analyzing basic chemicals that affect animal life.

B<sub>3</sub> - Teaching the student the techniques of making optical absorbance measuring devices for the purpose of measuring chemicals.

B<sub>4</sub> - Teaching the student the methods of studying and analyzing the concentrations of hormones.

B<sub>5</sub> - Teaching the student the methods of studying and analyzing the activity of enzymes.

### C-Teaching and Learning Methods

C<sub>1</sub>- Presentation methods: giving lectures to students while they are sitting in front of the teacher, and they listen to him, and he must have the ability to memorize and absorb information.

C<sub>2</sub>- Dialogue methods: the teacher uses the method of dialogue with the students in the manner of asking questions to the students and discussing the information with the students.

C<sub>3</sub>- The discovery method: the teacher observes the activities of the students conducting the experiments individually or collectively.

C<sub>4</sub>- Active methods: the students performs individual or group activities and the teacher takes the students hand towards learning in practical life inside and outside the educational institution and to come into contact with the vocabulary of practical life, which gives meaning to real learning.

C<sub>5</sub>- Giving lectures using modern methods for presenting power point topics and scientific films.

#### Assessment methods

1. Semester and final theory exams at a rate of 60%
2. Semester and final practical exams at a rate of 30%
3. Evaluation of extra-curricular activities (reports, posters and homework) by 10%
4. Learning triangle
5. Daily exams

D - General, rehabilitative and transferable skills (other skills related to employability and personal development).

D1- Teamwork: Working in harmony with the group or team.

D2- Initiative Motivation to work: the ability to take the initiative, determine the hypothesis, and develop ideas and proposed solutions.

D3- Planning & organization: An ability to set plans and programs that are feasible for implementation.

D 4- Flexibility: adapting to situations.

D 5- Time management: The ability to work on specific dates.

## 10. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	0	Cell biochemistry.	The cell	Theoretical (3 hours) + practical (3 hours)	daily exam
2	0	Mechanism of enzymatic action.	The enzymes	Theoretical (3 hours) + practical (3 hours)	Homework
3	0	kinetics, Regulation.	The enzymes	Theoretical (3 hours) + practical (3 hours)	daily exam
4	0	Bioenergetics & Biological oxidation.	Intermediary metabolism	Theoretical (3 hours) + practical (3 hours)	Homework
5	0	Metabolism, Bio signaling.	Intermediary metabolism	Theoretical (3 hours) + practical (3 hours)	daily exam
6	0	Citric acid cycle, The catabolism of acetyl CoA.	Intermediary metabolism	Theoretical (3 hours) + practical (3 hours)	Homework
7	0	Respiratory chain, Oxidative phosphorylation.	Intermediary metabolism	Theoretical (3 hours) + practical (3 hours)	
8	4	<b>Mid-term exam.</b>		Theoretical (3 hours) + practical (3 hours)	Theoretical (30) and practical (10) exams + reports (0)
9	0	Glycolysis.	Carbohydrates	Theoretical (3 hours) + practical (3 hours)	daily exam
10	0	Gluconeogenesis	Carbohydrates	Theoretical (3 hours) + practical (3 hours)	Homework
11	0	Pentose phosphate pathway.	Carbohydrates	Theoretical (3 hours) + practical (3 hours)	daily exam
12	0	Tri acyl glycerol metabolism	Lipids	Theoretical (3 hours) + practical (3 hours)	Homework
13	0	Oxidation of fatty acid, ketogenesis.	Lipids	Theoretical (3 hours) + practical (3 hours)	daily exam
14	0	Biosynthesis of fatty acids.	Lipids	Theoretical (3 hours) + practical (3 hours)	Homework
15	0	Cholesterol synthesis & excretion	Lipids	Theoretical (3 hours) + practical (3 hours)	
		Final Exam		Theoretical (3 hours) + practical (3 hours)	Theoretical and practical exams (40+10)

۱۰. Course Structure (second semester)

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
۱	۵	Lipid transport & storage.	Lipids	Theoretical (۳hours) + practical (۲ hours)	daily exam
۲	۵	Lipoproteins	Lipids	Theoretical (۳hours) + practical (۲ hours)	Homework
۳	۵	Protein metabolism.	The proteins	Theoretical (۳hours) + practical (۲ hours)	daily exam
۴	۵	Anabolism & catabolism of amino acids.	The proteins	Theoretical (۳hours) + practical (۲ hours)	Homework
۵	۵	Urea cycle.	The proteins	Theoretical (۳hours) + practical (۲ hours)	daily exam
۶	۵	Hormonal action.	Hormones	Theoretical (۳hours) + practical (۲ hours)	Homework
۷	۵	Signal transduction.	Hormones	Theoretical (۳hours) + practical (۲ hours)	
۸	۴	<b>Mid-term exam.</b>		Theoretical (۳hours) + practical (۲ hours)	Theoretical (۲۵) and practical (۱۰) exams + reports (۵)
۹	۵	Chemical properties of hormones.	Hormones	Theoretical (۳hours) + practical (۲ hours)	daily test
۱۰	۵	Thyroid hormones synthesis.	Hormones	Theoretical (۳hours) + practical (۲ hours)	Homework
۱۱	۵	Parathyroid hormones.	Hormones	Theoretical (۳hours) + practical (۲ hours)	daily exam
۱۲	۵	Adrenal cortex.	Hormones	Theoretical (۳hours) + practical (۲ hours)	Homework
۱۳	۵	Adrenal medulla.	Hormones	Theoretical (۳hours) + practical (۲ hours)	daily exam
۱۴	۵	Nucleotides: Structure & function	Genetic Information	Theoretical (۳hours) + practical (۲ hours)	Homework
۱۵	۵	Nucleic acid: Structure & function	Genetic Information	Theoretical (۳hours) + practical (۲ hours)	
		<b>Final-term exam.</b>		Theoretical (۳hours) + practical (۲ hours)	Theoretical and practical exams (۴۵+۱۵)

۱۱. Infrastructure

1. Books Required reading:	
2. Main references (sources)	<p>1-Schaum's outlines. General, Organic, and Biochemistry. 7<sup>nd</sup> ed.</p> <p>2-Harper's illustrated Biochemistry. 2<sup>8th</sup> ed. 2009.</p> <p>Robert K. Murray, David A. Bender.</p> <p>3-Biochemistry, Molecular biology &amp; Genetics. 6<sup>th</sup> ed. 2008.</p> <p>Todd A. Swarson, Sandra I. Kim, Marc J. Glucksman.</p>
A- Recommended books and references (scientific journals, reports...).	
B-Electronic references, Internet sites...	Wikipedia
12. The development of the curriculum plan	
<p>1. Searching for modern teaching and learning methods and means away from the old traditional recitation method. 2. Relying on modern educational means to transfer information. 3. The use of modern devices, machines and technologies, especially electronic ones, to deliver information so that the student uses all his auditory, visual and sensory senses in comprehending and storing the information in his mind. 4. Using chemical methods and modern equipment to examine and estimate the concentrations of chemical components.</p>	