

Course Description Form

1. Course Name:

Technology Biochemistry

2. Course Code:

TEBIO322

3. Semester / Year:

Second semester (fall) / 2023

4. Description Preparation Date:

1/2/2024

5. Available Attendance Forms:

Presence

6. Number of Credit Hours (Total) / Number of Units (Total)

(75 hours) / 3.5 units

7. Course administrator's name (mention all, if more than one name)

Name: Dr.Arqam Mohamad Alomary
and Farah Sameer Salh

8. Course Objectives

Theoretical

- Students learn the importance of basic life technology principles
2. The importance of analytical programs in daily life and the economic and educational importance of this program
3. And penetrate the available means to explain the proposed program and identify the characteristics of the devices accurately
4. How to employ technology and technological machines to develop the proposed program
5. Huge students will apply and employ this new program as one of the most important standards the future in society
6. Civil and governmental institutions, or where the program does not exist, as well as linking or employing students through understanding the concepts of life technologies.

Introducing the

student to the most important conditions that must be met in an ideal laboratory

Introducing and informing the student about the most important devices and equipment

Used in the laboratory

Enabling the student to prepare solutions in more than one way

Introducing the student to some life



technologies

9. Teaching and Learning Strategies

- Theoretical
- Interactive lecture
 - Brainstorming
 - Dialogue and discussion
 - Assigning reports
 - Conducting monthly and daily examinations

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theoretical 3Practical	b3: It shows the importance of life technologies in our daily, economic and medical lives PARTICAL b3: The student gets to know the most important specifications And safety conditions in the laboratory	THEORETICAL An overview of the life technologies subject PRACTICAL Instructionsand instructions for biological laboratory	Lectures, audio media, reports, reports and other methods	Discussing answers questions during thelecture,
2	2Theoretical 3Practical	THEORETICAL c1:It addresses the important details of biological diversity, which is a basic unit for the composition of the living body PRACTICAL a2: Identify solutions, classify them, and express their concentrations	THEORETICAL Living cell PRACTICAL Classification of solutions and methods of expressing their concentrations	Lectures, audio media, reports, reports and other methods	Discussing answers questions during thelecture, student interaction during lesson,giving homework,an exams



3	2Theoretical 3Practical	THEORETICAL a2: He is familiar with the process of replication in the living cell, which is the basis of the process of asexual sexual reproduction Familiar with PRACTICAL a2: methods of expressing the concentrations of solutions	THEORETICAL Replication in a living cell PRACTICAL Methods of expressing the concentrations of solutions	Lectures, audio media, reports, reports and other methods	Discussing answers questions during the lecture, student interaction during lesson, giving homework, an exams
4	2Theoretical 3Practical	THEORETICAL a2: Learn about the basic steps for cloning a gene or transferring information to another organism, starting with genetic cloning PRACTICAL a3: Proficient in Solving mathematical examples of preparing solutions	THEORETICAL Reproduction in a living cell PRACTICAL Solve some mathematical examples	Lectures, audio media, reports, reports and other methods	Discussing answers questions during the lecture, student interaction during lesson, giving homework, an exams
5	2Theoretical 3Practical	THEORETICAL b2: It explains the process of converting the twenty amino acids into proteins with physical, structural, or functional	theoretical Translation in the living cell PRACTICAL Abbreviations for concentrations, metric prefixes, and stock solution	Lectures, audio media, reports, reports and other methods	Discussing answers questions during the lecture, student interaction during lesson, giving

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		<p>functions PRACTICAL a3:Recognizes abbreviations for expressing concentrations, met prefixes, and stock solutions</p>			homework, and exams
6	2Theoretical 3Practical	<p>THEORETICAL b6:It proposes an appropriate method for understanding, understanding and applying procedures related the aforementioned concept PRACTICAL a2:Learn about ways to break down cells</p>	<p>THEORETICAL What are the foundations of the differences and similarities Between replication and cloning in prokaryotic and eukaryotic cells? PRACTICAL Methods of destroy cells</p>	Lectures, audio media, reports, reports and other methods	Discussing answers questions during thelecture, student interaction during lesson,giving homework,an exams
7	2Theoretical 3Practical	<p>THEORETICAL a2: He is aware of the importance of genes in transmitting traits from parents to children PRACTICAL b1:Mentions the main steps of DNA extraction</p>	<p>THEORETICAL Food environments PRACTICAL Count bacteria by Hemocytometer slide</p>	Lectures, audio media, reports, reports and other methods	Discussing answers questions during thelecture, student interaction during lesson,giving homework,an exams
8	2Theoretical 3Practical	<p>THEORETICAL a2:Learn how to convert nitrogenous bases into essential amino acids in the body and thus into proteins PRACTICAL</p>	<p>THEORETICAL Encoding nucleotides into amino acids. PRACTICAL Purification of DNA from cell extract</p>	Lectures, audio media, reports, reports and other methods	Discussing answers questions during thelecture, student interaction during lesson,giving

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		a2:He is familiar with DNA Purification from cell extract			homework,an exams
9	2Theoretical 3Practical	THEORETICAL a2:Judges to learn more about the importance of proteins in the body of an organism PRACTICAL a2:Deposition of DNA	THEORETICAL Proteins. PRACTICAL DNA precipitation	Lectures, audio media, reports, reports and other methods	Discussing answers questions during the lecture, student interaction during lesson, giving homework, an exams
10	2Theoretical 3Practical	THEORETICAL a3:The student learns about the application of procedures related to the concept of ways and means of using devices PRACTICAL a2:Learn about electrophoresis of DNA in agarose gel	THEORETICAL Levels of protein folding and what are the most important substances affecting the synthesis and denaturation of proteins. PRACTICAL Electrophoresis of DNA in agarose Gel	Lectures, audio media, reports, reports and other methods	Discussing answers questions during the lecture, student interaction during lesson, giving homework, an exams
11	2Theoretical 3Practical	THEORETICAL b6:He masters how convert the genes possessed by the cell into essential proteins that are important for the body PRACTICAL a1:Determines the factors affecting migration through an agarose gel	THEORETICAL Regulation of gene expression in eukaryotes occurs at several levels. PRACTICAL Factors affecting migration through agarose gel	Lectures, audio media, reports, reports and other methods	Discussing answers questions during the lecture, student interaction during lesson, giving homework, an exams
12	2Theoretical 3Practical	THEORETICAL b1:Identify the basic components	THEORETICAL The repression process of encoding	Lectures, audio media, reports, reports and	Discussing answers questions

		of protein formation PRACTICAL a1: Mention the steps involved in electrical relay	proteins. PRACTICAL The process of vertical migration of proteins using acrylamide gel	other methods	during the lecture, student interaction during lesson, giving homework, and exams
13	2 Theoretical 3 Practical	THEORETICAL c1; Identify the most important mutations that make up proteins PRACTICAL b3: Learn about practical application of casting and setting	THEORETICAL Genetic mutations and their effect on the formation of proteins. Giving practical examples of genetic mutations that affect proteins PRACTICAL Steps followed in detail for electrical relay	Lectures, audio media, reports, reports and other methods	Discussing answers questions during the lecture, student interaction during lesson, giving homework, and exams
14	2 Theoretical 3 Practical	THEORETICAL a2: Identify the most important mutation that make up Proteins PRACTICAL b3: Learn about the practical application of gel casting and setting	THEORETICAL Genetic mutations and their effect on the formation of proteins. Giving practical examples of genetic mutations that affect proteins PRACTICAL Steps followed in detail for electrical relay	Lectures, audio media, reports, reports and other methods	Discussing answers questions during the lecture, student interaction during lesson, giving homework, and exams
15	2 Theoretical 3 Practical	THEORETICAL Comprehensive article review. PRACTICAL	THEORETICAL Comprehensive article review. PRACTICAL	Lectures, audio media, reports, reports and other methods	Discussing answers questions during the lecture,

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	b3:He is familiar with the scientific visit	scientific visit		student interaction during lesson,giving homework,an exams
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11. Course Evaluation

t	Evaluation methods	Evaluation date (one week)	Grade	Relative weight %
1	Final theoretical report + theoretical practical reports	Theoretical 15 weeks Practical 1-15 weeks	7theoretical + 6 practical	13%
2	Short test 1 Quiz	3 weeks	4theoretical + 2practical	6%
3	Midterm exam (theoretical and practical)	9 weeks	10theoretical + 5 practical	15%
4	Short test 2 Quiz	12 weeks	4 theoretical + 2 practical	6%
5	Final practical test	practical exams week	20	20%
6	Final theoretical exam	theoretical exams week	40	40%
			100	100

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	The theoretical approach to the course on the principles of biotechnology/Administrator: Dr. Faten Dhawi Al-Mahna/ Doctorate in Philosophy Biochemistry And Molecular Biology, Department of Biotechnology
Main references (sources)	The theoretical curriculum for the principle of biotechnology course/counter: Dr.. Faten Dhawi Al-Mahna/ Doctorate in Philosophy of Science Biochemistry and Molecular Biology Department Biotechnology
Recommended books and references (scientific journals, reports...)	Library, scientific websites on the Internet View lectures from other Iraqi universities
Electronic References, Websites	Some solid scientific websites, especially for Iraqi universities



<p>مدرس المادة العملي :  م. فرح سمير صالح</p>	<p>مدرس المادة النظري :  أ.م.د. أرقم محمد العمري</p>
<p>رئيس القسم :  أ. م. د. فراس كاظم الجبوري</p>	<p>عضو اللجنة العلمية :  أ.د. جهينة ادريس محمد</p>

