

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	
Course number	STCH2203
Faculty	
Department	
Course type	Major Needs
Course level	2
Credit hours (theoretical)	2
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - Demonstrate an understanding of fundamentals and concept of biochemistry
2 - Develop critical thinking and analytical abilities
3 - Accelerate change in education using modern STEM pedagogies.

Intended Learning Outcomes

Knowledge and Understanding	<ul style="list-style-type: none"> * 2- Understand the chemistry of water, acid-base, buffers, Henderson-Hasselbach equation * 2. Describe the chemistry of carbohydrates, classification, structure, properties and explain the proteins classification, structure, amino acids * 5- Understand lipids classification, structure, cell membrane, membrane transport process... fat soluble vitamins * 7- Determine the enzymes, properties, function, mode of action, Michaelis-Menten equation, enzyme inhibitors.
Professional Skills	<ul style="list-style-type: none"> * 9- Design and conduct experiments, using a broad variety of experimental techniques, and interpret the data obtained to draw conclusions about whether the results do or do not support a hypothesis being tested and whether the experimental design was appropriate. * 8- Problem Solving Skills: Design, carry out, and record the results of chemical and biochemical experiments using classical techniques, modern instruments, and/or computers, then analyze those results to draw reasonable, accurate conclusions. * 10- Work collaboratively with other students and with faculty, understanding that most scientific knowledge/conclusions draw(s) on multiple sources of data and multiple experimental approaches.

Course Contents

- 1 - This subject is designed to enhance the understanding of the fundamentals and concept of biochemistry, including the major constituents of cell, Biomolecules, water, acid-base, buffers, Henderson-Hasselbach equation, carbohydrates classification, structure, properties, etc., proteins classification, structure, amino acids etc., lipids classification, structure, cell membrane, membrane transport process... fat soluble vitamins, Nucleic acids, transport of glucose from blood to cells. Bioenergetics, enzymes, properties, function, mode of action, Michaelis-Menten equation, enzyme inhibitors.

Teaching and Learning Methods

- 1 - Biochemistry Flipped Course is built around a model where students watch subject videos as homework, with assignments to guide them, and then use classroom time for in-depth discussions and problem-based learning

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
Quizzes	30	20
Midterm	60	20
Final	120	40
Practical	60	20

Books and References

Essential books	CAMPBELL, M.K.; FARRELL, S.O. AND McDougal, O. M. (2018): BIOCHEMISTRY, 9TH EDITION, INTERNATIONAL STUDENT EDITION, THOMSON BROOKS/COLE, USA.
-----------------	---