

Course Specification Student Version

Course Title:	Biochemistry 2
Course Code:	BCH 262
Department:	Basic Medical Sciences
Program:	Bachelor of Dentistry
College:	Vision College in Riyadh
Institution:	Vision College in Riyadh
Revised:	June 2025

A. Course Identification

1. Credit hours: 2 (1+1+0)
2. Level/year at which this course is offered: Level 4/Year 2
3. Pre-requisites for this course (if any): Biochemistry 1 (BCH 261)
4. Co-requisites for this course (if any): None

B. Teaching Methods

1	Lecture
2	Practical
3	Seminar

C. Course Description and Objectives

This course designed to give the students basic cognitive knowledge of the:

- Energy metabolism and nutrition.
- Blood biochemistry, hemoglobin, plasma proteins and immunoglobulin.
- Biological buffers.
- Control and integration of metabolism (homeostasis).
- Connective tissues: collagen and keratin.
- The importance of vitamin C and D.
- Metabolism of calcium and phosphorus.
- Biochemistry of bone, cementum and enamel.
- Biochemistry of teeth, saliva and dental caries.

2. Main course Objective

This course aims to complete understanding the essential topics of biochemistry including blood chemistry, homeostasis, nutrition and biological buffer.

3. Course Objectives

By the end of this course, students should be able to:

- Recognize the central role of chemical energy in living systems.
- Explain mineralization and demineralization processes.
- Understand the homeostasis in the human body and the mode of action of biological buffers.
- Explain function of the main salivary components relative to the integrity of the oral cavity.
- Recognize the function and metabolic pathways for the most clinical useful proteins.
- Describe function and metabolism of vitamins and minerals.

- Understand the effects of inborn errors of metabolism and other diseased states resulting from molecular imbalances.

D. Course Content

No	List of Topics
1	Introduction of Biochemistry
2	Energy metabolism and nutrition
3	Vitamin D and mineralization process
4	Metabolism of calcium and phosphorus
5	Biochemistry of teeth, saliva and dental caries
6	Energy metabolism and nutrition
7	Heme and haemoglobin anabolism
8	Haemoglobin catabolism
9	Iron metabolism
10	Connective tissues: collagen and keratin
11	The importance of vitamin C
12	Biological buffers

E. Assessment Tools

#	Assessment task	Percentage of Total Assessment Score
1	Quizzes	10%
2	Assignments	10%
3	Midterm Exam	20%
4	Practical Exam	20%
5	Final Exam	40%
	Total	100%

F. Learning Resources

Essential References	DM Vasudevan, Sreekumari S and KannanVaidyanathan, Textbook of biochemistry for dental students, 2nd Edition 2011.
Supportive References	a. Champe, P. C., Harvey, R. A. and Ferrier, D. R., 2005. Biochemistry “Lippincott’s Illustrated Reviews”, 3 rd Edition. b. Shivananda Nayak B, (2013). Essentials of Biochemistry for Medical Students.
Electronic Materials	http://www.oxfordjournals.org/our_journals/jbchem/jb_top_50_cited_papers.html http://www.omicsonline.org/chemistryjournals.php?gclid=CN_P6p5iNudACFQXnGwodYo0ENA
Other Learning Materials	None