VITAMIN BIOCHEMISTRY AND COENZYMES

1	Course Title:	VITAMIN BIOCHEMISTRY AND COENZYMES	
2	Course Code:	BIO6417	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	1	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. EGEMEN DERE	
15	Course Lecturers:	Prof. Dr. Ferda ARI	
16	Contact information of the Course Coordinator:	Doç. Dr. Egemen DERE Bursa Uludağ Üniversitesi Fen Ed. Fak Biyoloji Bl. Moleküler Biyoloji Anabilim Dalı Tel: 0 224 41792 edere@uludag.edu.tr	
17	Website:		
18	Objective of the Course:	he aim of the course is to comprehend structures of vitamins and coenzymes. To explain the role of coenzymes in metabolism	
19	Contribution of the Course to Professional Development:	Coenzymes are the most important molecules in biochemical reactions. Vitamins serve in the molecular structure of coenzymes. Some vitamin-like molecules are also involved in metabolism as coenzymes. Students who learn why they used coenzymes in their experimental studies will interpret the experimental results better.	
20	Learning Outcomes:		
		1	Students can compare foods which is vitamin in
		2	Students can evaluate the structure of coenzymes with vitamins
		3	Students can identify the types of coenzymes
		4	Students can explain electron transport mechanisms of coenzymes
		5	Students can grasp the metabolic importance of coenzymes and vitamins
		6	students can grasp the enzymes work together with coenzymes
		7	Students can grasp the importance of nucleotide triphosphates
		8	Students can understand the diseases occurring deficiency of vitamins and coenzymes
		9	
		10	
21	Course Content:		
	Course Content:		
Week	Theoretical	Practice	

1	Introduction to vitamins and classification. Properties of water and fat soluble vitamins	
2	Vitamin equivalent (CoA, alpha lipoat, PABA, cholin, carnitine, inositol	
3	Thiamine - B1 vit, coenzyme TPP and their reaction mechanism and biochemical reactions involving	
4	Riboflavine - B2 vit, ccoenzyme FMN, and their reaction mechanism and biochemical reactions involving	
5	Niacin - B3 vit coenzyme NAD, NADP, and their reaction mechanism and biochemical reactions involving	
6	Pentatonic acid - B5 vit. co A, and their reaction mechanism and biochemical reactions involving	
7	Exam and answer of examination questions, general discussion	
8	Pyridoxine - B6 vit, Pyridoxal 5-P, and their reaction mechanism and biochemical reactions involving	
9	Biotine Vit H, B7, Biositin Coenzyme R, Folic acid B9, THFA, and their reaction mechanism and biochemical reactions involving	
10	Cobalamine - B12 vit, coenzyme B12, Lipoic acid, Lipollizin, and their reaction mechanism and biochemical reactions involving	
11	vitamin C	
12	The metabolic importance of A and D	
13	Self study and preparation	
14	The metabolic importance of E and K	
22	Textbooks, References and/or Other	Nutritional Biochemistry of the Vitamins, David A Bender
23	Assesment	

Activites		Number	Duration (hour)	Total Work Load (hour)
Theoretical		14	3.00	42.00
Practicals/Labs		0	0.00	0.00
Homeworks		2	13.00	26.00
Projects		1	12.00	12.00
Field Studies		0	0.00	0.00
Midterm exams		1	3.00	3.00
Others		6	4.00	24.00
Final Exams	R	1	3.00	3.00
Total Work Load				180.00
Quiz	0	0.00		6.00
Total work load/ 30 hr				
ECTS Credit of the Course				6.00

Final Exam	1	60.00
Total	4	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		Homework, oral and classical exam

24	**ECTS / WORK LOAD TABLE**

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	2	3	2	2	3	3	2	2	2	2	2	0	0	0	0	0
ÖK2	4	4	3	2	3	3	3	3	3	3	3	0	0	0	0	0
ÖK3	4	3	4	4	3	4	3	2	3	3	3	0	0	0	0	0
ÖK4	4	4	3	2	3	3	3	3	3	3	3	0	0	0	0	0
ÖK5	4	3	4	4	3	4	3	2	3	3	3	0	0	0	0	0
ÖK6	4	3	3	4	3	3	3	2	3	3	3	0	0	0	0	0
ÖK7	4	4	3	2	3	3	3	3	3	3	3	0	0	0	0	0
ÖK8	4	3	4	4	3	4	3	2	3	3	3	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	**1 very low**		**2 low**			**3 Medium**			**4 High**			**5 Very High**				