ENERGY METABOLISM AND CONTROL

1	Course Title:	ENERGY METABOLISM AND CONTROL	
2	Course Code:	VBK5006	
3	Type of Course:	Compulsory	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	2	
11	Prerequisites:		
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. SAİME GÜZEL	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	saime@uludag.edu.tr	
17	Website:		
18	Objective of the Course:	The aim of this course is to provide comprehensive knowledge to students in the following subjects: energy and energy types energy transformations in living organisms catabolism and its stages in living cells energy uptake from carbohydrates, lipids and proteins ATP and electron transport systems	
19	Contribution of the Course to Professional Development:	To have a deep knowledge about energy metabolism and their mechanisms in healthy organisms, thus, to interpret pathological conditions by knowing normal functional mechanisms and to offer alternatives for treatment.	
20	Learning Outcomes:		
		1	To be able to explain the knowledge gained on Energy Metabolism with a scientific understanding.
		2	to be able to interpret and calculate with numerical data the energy obtained from macromolecules
		3	To be able to use this knowledge gained in this lesson as a support in diagnosis and treatment in clinical sciences
		4	Adapting the obtained knowledge to field conditions and developing technology
		5	To be able to follow and interpret new developments and knowledge on this subject
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21	Course Content:		
	Course Content:		

Week	Theoretical	Practice
1	Energy and introduction to metabolism	
2	Thermodynamics of phosphate compounds	
3	Fermentation and anaerobic oxidation	
4	catabolism and steps of catabolism	
5	TCA cycle	
6	Electron transport chain and oxidative phosphorylation	
7	carbohydrate metabolism	
8	Energy output and regulation of glycolysis	
9	Glycogen metabolism	
10	Hormonal regulation of glycogen metabolism	
11	Glyconeogenesis and regulation	
12	Lipid metabolism and energy output	
13	Integration of lipid and carbohydrate metabolism	
14	Protein metabolism	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	7	7.00	49.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	15.00	15.00
Total Work Load			120.00
Total work load/ 30 hr			4.00
ECTS Credit of the Course			4.00

David L Nelson, Michael M Cox. Lehninger Principles of Biochemistry. Fifth edition, 2008.

Robert Murray, David Bender, Kathleen M. Botham, Peter J. Kennelly, Victor Rodwell, P. Anthony Weil. Harpers

Denisie R Ferrier. Biochemistry (Lippincott's Illustrated

Richard A. Harvey, Denise R. Ferrier. Biochemistry

23	Assesment	**R**
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	100.00
Total	1	100.00
Contribution of Term (Year) Learning Activities to Success Grade		0.00
Contribution of Final Exam to Success Grade		100.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		Measurement and evaluation are performed according to the Rules & Regulations of Bursa Uludağ University on Undergraduate Education.

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	5	0	5	4	5	5	4	0	0	0	0	0	0	0	0	0
ÖK2	5	5	5	0	0	0	4	0	0	0	0	0	0	0	0	0
ÖK3	5	5	0	0	5	5	5	0	0	0	0	0	0	0	0	0
ÖK4	5	0	0	0	5	5	5	0	0	0	0	0	0	0	0	0
ÖK5	5	4	5	5	0	5	4	0	0	0	0	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**				