UNIVERSITY OF PATRAS
SCHOOL OF HEALTH SCIENCES
DEPARTMENT OF PHARMACY
UNDERGRADUATE STUDIES' COURSES

COURSE DESCRIPTION: **BIOCHEMISTRY II**
COURSE CODE: **PHA-B11-NEW**

BIOCHEMISTRY II
COURSE DESCRIPTION

1. GENERAL

SCHOOL	HEALTH SCIENCES		
SEPARTMENT	PHARMACY		
LEVEL OF COURSE	UNDERGRADUATE		
COURSE CODE	**PHA-B11-NEW**	**SEMESTER OF STUDIES**	**3rd**
COURSE TITLE	BIOCHEMISTRY II		

INDEPENDENT TEACHING ACTIVITIES	**TEACHING HOURS PER WEEK**	**ECTS CREDITS**
Lectures	4	7
Laboratory courses	3	

COURSE TYPE	Scientific Field course
PREREQUISITE COURSES:	-
TEACHING AND ASSESSMENT LANGUAGE:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Not offered
COURSE WEBPAGE (URL)	http://www.pharmacy.upatras.gr/images/DS/PHA-B11-EN.pdf

2. LEARNING OUTCOMES

Learning Outcomes
A living organism requires thousands of coordinated chemical reactions. In this course we will study the major integrated metabolic pathways of living cells and whole organisms, with particular attention to enzyme mechanisms, as well as the regulation, and integration of metabolism from the molecular to the whole organism level. The synthesis and degradation of carbohydrates, amino acids, lipids, and nucleotides are investigated, along with the mechanisms of energy flow and cell-to-cell communication. While common metabolic processes are emphasized, unique aspects of metabolism that permit cells to function in unusual niches will also be considered.
General Abilities
Data and information searching Analysis and combination, Using the appropriate technologies and databases Team Work Promote free, creative and inductive thinking

3. COURSE CONTENT

Lectures

- Biological membranes (structure, function, principles of membrane transport, channels and resources)
- The immune system
- Sensor systems
- Introduction to Steroid Hormones – Cholesterol
- Carbohydrates, carbohydrate metabolism
- KREBS cycle
- Biological oxidations
- The Calvin cycle and the course of phosphate pentoses
- Metabolism of fatty acids
- Complete Metabolism

Lab Exercises

- Introduction to the lab
- Chromatography
- Quantification of proteins
- ELISA

4. TEACHING AND LEARNING METHODS - ASSESSMENT

Teaching method	Interactive teaching within a classroom
Use of information and communication technologies	• The teaching and learning process is supported by the Upatras e-class platform. The teaching material (lectures, tutorials, laboratory experimental protocols) is uploaded and stored on the e-class and it is freely accessible to all students. • Teaching process is supported by Information and Communication Technologies (ICTs).
Teaching organization	***Teaching Method*** — ***Semester Workload*** Lectures — 52 Laboratory Work + Tutorials — 39 Un-supervised study — 84 ***Total number of hours for the Course*** **(25 hours of work-load per ECTS credit) — 175**
STUDENT ASSESSMENT	Assessment language: Greek Evaluation of the students is carried out through written examination at the end of the semester and oral evaluation during the laboratory courses. Written examination and oral evaluation is carried out in Greek language. Written examination includes the description for a number of theory topics and multiple-choice exercises. Evaluation criteria and rules are presented to the students at the beginning of the theory courses and laboratory training courses.

5. RECOMMENDED LITERATURE

Suggested Books: (in greek)
Jeremy Berg, John Tymoczko and Lubert Stryer, Biochemistry
R. Ochs, Biochemistry, ED. Parisianos