

COURSE OUTLINE

1. GENERAL

SCHOOL	FOOD and NUTRITIONAL SCIENCES		
DEPARTMENT	FOOD SCIENCE and HUMAN NUTRITION		
STUDY LEVEL	Undergraduate		
MODULE CODE	3320	SEMESTER	3 rd
MODULE TITLE	BIOCHEMISTRY		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		WEEKLY TEACHING HOURS	ECTS
Lectures		3	3
Practical Courses		2	2
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	General background		
PREREQUISITE COURSES:	Organic Chemistry		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES (in English)		
COURSE WEBSITE (URL)	https://oeclass.aua.gr/eclass/courses/ETDA127/		

2. LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

The course is a **basic introductory course** on concepts of biochemistry. **The course aims** at studying and understanding the structure and the biological role of the main biological molecules, in particular, proteins, lipids and carbohydrates, as well as of their biosynthesis and catabolism. The aim is also at studying and understanding the main oxidative pathways in biological systems. Finally, the course aims at training students in basic methodological and experimental approaches in the field of Biochemistry.

Upon successful completion of this course, students will be able to:

- Understand the role and function of key biological molecules and their metabolism
- Integrate the knowledge in designing new methodological and experimental approaches in the field of Biochemistry
- Integrate the knowledge in the study and understanding of other related sciences
- Study independently and critically
- Present their knowledge, in specific and non-specific audiences, with completeness and clarity

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	Project planning and management Respect for difference and multiculturalism Respect for the natural environment
Adapting to new situations	Showing social, professional and ethical responsibility and sensitivity to gender issues
Decision-making	Criticism and self-criticism
Working independently	Production of free, creative and inductive thinking
Teamwork	
Working in an international environment	Others...
Working in an interdisciplinary environment	
Production of new research ideas	

- Search, analysis, and synthesis of data and information, using the necessary technologies
- Generation of new research ideas
- Work in an interdisciplinary environment
- Exercise of critical thinking and self-reflection
- Promotion of free, creative, and inductive thinking
- Independent work
- Teamwork

3. SYLLABUS

PROTEINS

1. Structure and biological role of proteins
2. Enzymes

LIPIDS

1. Structure and biological role of lipids
2. Lipid catabolism
3. Lipid biosynthesis

CARBOHYDRATES

1. Structure and biological role of carbohydrates
2. Carbohydrates catabolism
3. Carbohydrate biosynthesis

BIOLOGICAL OXIDATIONS

1. Krebs Cycle
2. Glyoxylate cycle
3. Respiratory chain
4. Oxidative phosphorylation

4. TEACHING and LEARNING METHODS - Evaluation

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face or via Internet if needed
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	1. E-material (CD) 2. Internet

Use of ICT in teaching, laboratory education, communication with students															
TEACHING METHODS The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc. The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS	<table border="1"> <thead> <tr> <th>Activity</th><th>Working load</th></tr> </thead> <tbody> <tr> <td>Lectures</td><td>80</td></tr> <tr> <td>Practical Courses</td><td>45</td></tr> <tr> <td>Team Project</td><td></td></tr> <tr> <td>Field Trip /</td><td></td></tr> <tr> <td>Independent Study</td><td></td></tr> <tr> <td>Total (25 h of working load per one ECTS)</td><td>125</td></tr> </tbody> </table>	Activity	Working load	Lectures	80	Practical Courses	45	Team Project		Field Trip /		Independent Study		Total (25 h of working load per one ECTS)	125
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Total (25 h of working load per one ECTS)	125														
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure Language of evaluation, methods of evaluation, summative or conclusive, multiple-choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other Specifically defined evaluation criteria are given, and if and where they are accessible to students.	I. Written exams (100 %), including: • Questions & Answers • Essays • Comparative Evaluation of Topics from Theory & Practical Courses														

5. BIBLIOGRAPHY

BIOCHEMISTRY by Jeremy M. Berg, Gregory J. Gatto Jr., Justin K. Hines, Jutta Beneken Heller, John L. Tymoczko, Lubert Stryer, Published by W.H. Freeman & Company, US