

Universitatea din Oradea	PROCEDURA pentru inițierea, aprobarea, monitorizarea și evaluarea periodică a programelor de studii	COD: SEAQ PE – U. 01						
			4	5	6	7	8	9
			Aprobat în ședința de Senat din data: -- 03.03.2014					

Anexa 6

COURSE SYLLABUS

1. Information on the study programme

1.1 Academic institution	UNIVERSITY OF ORADEA
1.2 Faculty	FACULTY OF ENVIRONMENTAL PROTECTION
1.3 Department	ANIMAL SCIENCE - AGRIOTOURISM
1.4 Field of study	ENGINEERING AND MANAGEMENT IN PUBLIC FOOD AND AGROTOURISM
1.5 Cycle of study	BACHELOR
1.6 Study programme/Qualification	ENGINEERING AND MANAGEMENT IN PUBLIC FOOD AND AGROTOURISM

2. Information on the discipline

2.1 Name of discipline	BIOCHEMISTRY I						
2.2 Course coordinator	Lecturer PhD. GHERGHELEȘ CARMEN GEORGETA						
2.3 Laboratory/Project coordinator	Lecturer PhD. GHERGHELEȘ CARMEN GEORGETA						
2.4 Year of study	I	2.5 Semester	I	2.6 Type of evaluation	E	2.7 Regime of discipline	C

(C) Compulsory; (O) Optional; (E) Elective

3. Total estimate time (hours per semester of didactic activities)

3.1 Number of hours per week	4	out of which: 3.2 course	28	out of which 3.3 seminar/laboratory/project	28
3.4 Total hours in the curriculum	56	out of which: 3.5 course	28	out of which 3.6 seminar/laboratory/project	28
Time allotment					hours
Study assisted by manual, course support, bibliography and notes					15
Additional documentation in the library/ on specialised electronic platforms and in the field					20
Preparation of seminars/laboratories/ topics/reports, portfolios and essays					15
Tutorship					2
Examinations					4
Other activities.....					0
3.7 Total hours of individual study					56
3.9 Total hours per semester					112

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3.10 Number of credits	4	
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4. Prerequisites (where appropriate)

4.1 Curriculum	
4.2 Competences	

5. Conditions (where appropriate)

5.1. related to course	Video Projector, computer
5.2. related to seminar/laboratory/ project	Equipment and laboratory reagents specific to laboratory work, computer

6. Specific competences acquired	
Professional competences	<ul style="list-style-type: none"> Knowledge of theoretical and practical principles of biochemical analysis techniques. Training the ability to perform and interpret various biochemical analyzes used in veterinary food control, clinical laboratory, pharmaceutical control laboratory, air and water quality monitoring laboratories.
Transversal competences	<ul style="list-style-type: none"> Acquiring basic knowledge to address disciplines such as animal and human physiology, genetics, cell biology, subjects taught during the years of study. Developing the abilities of graduates to organize and carry out laboratory activities as complex as possible.

7. Objectives of discipline (coming from the specific competences acquired)

7.1 General objective	The discipline of Biochemistry aims to provide knowledge from the chemical point of view of life phenomena, research into the chemical nature of cellular components, the structure and properties of structural compounds, as well as the various transformations that take place in the body. Biochemistry is what establishes the connection between organisms and products, clarifies the role and transformations of living cell components
7.2 Specific objectives	

8. Content*/

8.1 Course	Methods of teaching	No. of hours/Remarks
1. Introduction to the study of	Interactive lecture,	2

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biochemistry. The importance of biochemistry. a) General aspects. The specifics of biochemistry, in relation to chemistry. Modern theories in biochemistry b) Defining specific terms. Biochemical literature. c) Chemical synthesis and biosynthesis.	logic presentation, deductive explanation, and constructive conversation	The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
2. General principles of chemical and biochemical organization of the animal organism a) The biochemical characteristics of living matter b) The general chemical composition of the animal organism	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
3. c) The organic components of the animal organism	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
4. d) Water, the main constituent of living organisms - Polarity of water molecules - Molecular association and hydrogen bonding - Water as a solvent - Water ionization - The ionic product of water. PH scale	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
5. e) Types of chemical bonds in molecules Exposition, Debate	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by

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		participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
6. Carbohydrates. a) General considerations b) Constitution c) Classification d) The role of carbohydrates in the body	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
7. Monoglucide. a) Structure and isomerism of monoglycerides b) Physical properties of monoglycerides	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
8. c) Chemical properties of monoglycerides d) Most important natural monoglycerides	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
9. Oligoglucide. a) Classification b) Chemical and physical properties c) Important diglucide	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
10. Polyglucide	Interactive lecture,	2

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	logic presentation, deductive explanation, and constructive conversation	The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
11. Carbohydrate metabolism. a) Alcoholic fermentation.	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
12. b) The Krebs cycle	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
13. c) The Krebs cycle. Photosynthesis.	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works The fraud during examination implies to exclude the student from examination and proposal for expulsion
14. d) Biosynthesis of sugars. Glycogen	Interactive lecture, logic presentation, deductive explanation, and constructive conversation	2 The student's presence during the course is optional but recommended. The presence of the student in the examination is conditioned by participation in the laboratory works

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		The fraud during examination implies to exclude the student from examination and proposal for expulsion
Bibliografy		
1. A. L. Lehninger - <i>Biochimie</i> , vol. I and II, Edit. Tehnică, București, 1987, 1992.		
2. G. Drochioiu, I. Mangalagiu, I. Druță – <i>Biochimie generală</i> . Edit. Demiurg, Iași, 2002.		
3. V. Tămaș - <i>Biochimie Medicală Veterinară</i> , Editura Agronomia Cluj – Napoca, 1988		
4. Jeremy M. Berg, John L. Tzmoczko, Lubert Stryer – <i>Biochimie</i> , Berlin, Spektrum Akademischer Verlag GmbH Heidelberg 2003		
8.2 Seminar	of teaching	No. of hours/ Remarks
1. Processing the norms of labor protection and safety in the biochemistry laboratory.	-	-
2. Presentation of the equipment used in volumetric analysis	Problem-solving, explanation, modeling	2
3. Basic analytical techniques. Preparation and properties of solutions	Problem-solving, explanation, modeling	2
4. Practical operations: Balance weighing. Dissolution of substances	Problem-solving, explanation, modeling	2
5. pH of solutions. Methods for determining pH.	Problem-solving, explanation, modeling	2
6. pH indicators	Problem-solving, explanation, modeling	2
7. Determining the density of solutions	Problem-solving, explanation, modeling	2
8. Determination of viscosity	Problem-solving, explanation, modeling	2
9. Spectroscopic methods	Problem-solving, explanation, modeling	2
10. Experimental determination of the concentration of a substance	Problem-solving, explanation, modeling	2
11. Chromatographic analysis techniques	Problem-solving, explanation, modeling	2
12. Refractometric techniques	Conversation	2
13. Polarimetric techniques	Conversation	2
14. Colloquium	Conversation	2
Bibliography		
Alfa Xenia Lupea, Mirabela Padure, Carmen Ionescu – <i>Elemente de biochimie și analiză a unor produse alimentare</i> , Editura Universității din Oradea, 2003		
Camelia Bara, Cornelia Tonț, Carmen Ionescu: <i>Microbiologia și controlul calității laptelui și a produselor lactate</i> , Ed. Universității din Oradea, 2001, ISBN 973-8219-46-9		
Ionescu Carmen, O. Henegariu. L. Bara, G. Ciobanu: <i>Tehnologii de prelucrare și microbiologie a</i>		

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* The content, respectively the number of hours allocated to each course / seminar / laboratory / project will be detailed during the 14 weeks of each semester of the academic year.

9. Corroboration of discipline content with the expectations of the epistemic community, professional associations and representative employers from the field corresponding to the study programme

- The content of the discipline is in line with what is done in other university centers in the country and abroad.
- The content of the discipline is found in the curriculum of the Animal Science and Agrioturism specialization and from other university centers that have accredited these specializations..

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the final grade
10.4 Course	Evaluation of theoretical knowledge acquired	Exam - write test	100%
10.5 Seminar	-	-	-
10.6 Laboratory	-	-	-
10.7 Project			
10.8 Minimum standard of performance			
<ul style="list-style-type: none"> • Minimum 7 - the project evaluation • Minimum 5 - exam 			

Issuing date

Signature of course coordinator
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Director of Department Signature
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