Universida_{de}Vigo

Subject Guide 2023 / 2024

IDENTIFYIN	IG DATA			
Biochemist	ry Diashawista			
Subject	Biocnemistry			
Code	V10G061V01201			
Study	Grado en Ciencias			
programme	del Mar			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	2nd	Ist
leaching	#EnglishFriendly			
language	Spanish			
Department				
Coordinator	San Juan Serrano, María Fuencisla			
Lecturers	San Juan Serrano, María Fuencisla			
E-mail	fsanjuan@uvigo.es			
Web				
General	Basic concepts on the structure and function of biom	oléculas, integrat	ion and regulati	on of their metabolism
description	and transmission and expression of the genetic infor	mation.		
	English Friendly subject: International students may a) resources and bibliographic references in English, exams and assessments in English.	request from the b) tutoring sessio	teachers: ns in English, c)	
Training ar	id Learning Results			
Code				· · · · · · ·
A2 Studen	ts can apply their knowledge and understanding in a n	nanner that indica	tes a profession	al approach to their work
or voca	tion, and have competences typically demonstrated th	rough devising ar	nd sustaining ar	guments and solving
probler	ns within their field of study	· · · · · · · · · ·		
A3 Studen	ts have the ability to gather and interpret relevant dat	a (usually within t	heir field of stud	ly) to inform judgments
that inc	clude reflection on relevant social, scientific or ethical i	ssues		
A4 Studen	ts can communicate information, ideas, problems and	solutions to both s	specialist and no	on-specialist audiences
B1 Know a	nd use vocabulary, concepts, principles and theories re	elated to oceanog	raphy and apply	veverything learned in a

B1 Know and use vocabulary, concepts, principles and theories related to oceanography and apply everything learned in a professional and/or research environment.

B3 Recognize and implement good practices in measurement and experimentation, and work responsibly and safely both in field surveys and in the laboratory.

B4 Manage, process and interpret the data and information obtained both in the field and in the laboratory.

C9 Acquire basic knowledge about the structural and functional organization and the evolution of marine organisms.

C11 Apply the knowledge and techniques acquired to the characterization and sustainable use of living resources and marine ecosystems.

D1 Develop the search, analysis and synthesis of information skills oriented to the identification and resolution of problems.

D2 Acquire the ability to learn autonomously, continuously and collaboratively, organizing and planning tasks over time.

Expected results from this subject						
Expected results from this subject		Training and Learning				
			Results			
Acquisition of basic concepts about biomolecules structure, metabolic reactions, the main		B1	C9			
processes of obtaining and utilisation of energy and transmission and expression of the genetic		Β3				
information.						
Approach of the biological phenomena in molecular terms, relating the structure of each	A2	B1	C9			
biomolecules family with the biological function that exert	A3					
Acquisition and appropriate utilisation of concepts and biochemical terminology	A4	B1	C9			
			C11			
Resolution of questions of quantitative biochemistry	A2			D1		
				D2		
Familiarisation with use of basic instrumental and equipment of a biochemical laboratory	A2	B3				

Knowledge and application of simple techniques of separation and quantification of biomolecules		B3	D1
		B4	
Development of scientific thinking style	A2	B1	D1
	A3		D2
	A4		

Inorganic components from living organisms: Importance of no covalent interactions. Role of the water in the biological processes. Interactions of the macromolecules in solution. Nucleic acids Composition of nucleosides and nucleotides. Deoxyribmucleic acid. Amino acids and proteins: Classification and properties of the amino acids. Peptides and proteins: structure, function and classification. Carbohydratess: General characteristics and classification. Carbohydratess: General characteristics and biological importance. Classification: fatty acids, simple lipids; complex lipids; isoprenoid lipids; elcosanoids. Enzymes: Concept, acids; simple lipids; complex lipids; elcosanoids. Enzymes: Concept, acids; simple lipids; elcosanoids. Enzymes: Concept, acids; simple lipids; elcosanoids. Encergy from biological processes. Perture tabolism: Digestion of polysaccharides. Glycoogen etabolism. Energy from biological processes. Perture tabols. Encrymetics: Conception of lipids. Biosynthesis of fatty acids. Regulation of fatty acids. Regulation of fatty acids. Regulation of fatty acids. Regulation of fatty acids. Metabolism: Digestion and absorption of lipids. Biosynthesis of fatty acids. Metabolism. Mitrogen exerction and urea cycle. Catabolism. Nucleoide metabolism. Nucideoide metab	Contents Topic	
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Kinetic characterisation.	······································	Measurement of enzyme activity.
		Kinetic characterisation.
Planning	Planning	
Class hours Hours outside the Total hours		Class hours Hours outside the Total hours

Lecturing	41.5	74.7	116.2	
Seminars	4	9	13	
Laboratory practical	6	1.5	7.5	
Objective questions exam	3	0	3	
Problem and/or exercise solving	0	8.3	8.3	
Report of practices, practicum and externa	l practices 0	2	2	

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies	
	Description
Lecturing	The professor will give fundamental notions needed to understand and prepare the contents of the matter.
Seminars	The seminars will be carry out collaborative way. Students will prepare some of the contents of program and some related subject of interest. The completion of the Seminars is mandatory to pass the subject.
Laboratory practical	The practices will familiarise students with some basic methods and techniques of extraction, separation and quantification of biomolecules, the measure of the enzyme activity and kinetical parameters. The completion of Laboratory practices is mandatory to pass the subject.

Personalized assistance					
Methodologies	Description				
Lecturing	Students willing so could attend personal tutorials to solve doubts and/or uncertainties, which will mainly take place during the timetables indicated. To better optimise the procedure, the student is requested to previously contact his/her teacher with reasonable anticipation. Tutoring hours: Tuesday, Wednesday and Thursday from 13:00 to 14:00 p.m				
Seminars	Students willing so could attend personal tutorials to solve doubts and/or uncertainties, which will mainly take place during the timetables indicated. To better optimise the procedure, the student is requested to previously contact his/her teacher with reasonable anticipation. Tutoring hours: Tuesday, Wednesday and Thursday from 13:00 to 14:00 p.m				
Laboratory practical	Students willing so could attend personal tutorials to solve doubts and/or uncertainties, which will mainly take place during the timetables indicated. To better optimise the procedure, the student is requested to previously contact his/her teacher with reasonable anticipation. Tutoring hours: Tuesday, Wednesday and Thursday from 13:00 to 14:00 p.m				
Tests	Description				
Objective questions exam	Students willing so could attend personal tutorials to solve doubts and/or uncertainties, which will mainly take place during the timetables indicated. To better optimise the procedure, the student is requested to previously contact his/her teacher with reasonable anticipation. Tutoring hours: Tuesday, Wednesday and Thursday from 13:00 to 14:00 p.m				
Problem and/or exercise solving	Students willing so could attend personal tutorials to solve doubts and/or uncertainties, which will mainly take place during the timetables indicated. To better optimise the procedure, the student is requested to previously contact his/her teacher with reasonable anticipation. Tutoring hours: Tuesday, Wednesday and Thursday from 13:00 to 14:00 p.m				

Assessment						
	Description	Qualification	·	Trair	ning a	nd
			Le	arnii	ig ke	Suits
Seminars	In the realization of the seminars values the capacity to relate and apply the concepts purchased, to identify and understand problems, the appropriate	20	A2 A3	B1	C9 C11	D1 D2
	utilization of the terminoloxía biochemical, his capacity to transmit the information.		A4			
	How transversal competitions value the initiative, the capacity of autonomous learning, the work in team, the capacity of organization, the critical capacity and the skill in the research of information and handle of the computer. Given its experimental nature, attendance is mandatory.	5	_			
Laboratory practical	To the finalizar the practices will realize an examination or will deliver a report to value the knowledge and handle of the technicians instrumentais used, the application of the theoretical knowledges to the practice, the capacity of analysis, procesamento and interpretation of the results obtained.	20	A2 A3 A4	B1 B3 B4	C9 C11	D1 D2
	Given its experimental nature, attendance is mandatory.		_			

Objective questions exam	Test: It asses, in a general way, the knowledge acquired of the course program	40	A2 A3 A4	Β1	C9	
	Short answer: It asses the knowledge acquired, the ability to relate them and the proper use of concepts and biochemical terminology.					
Problem and/or exercise solving	Finalized the theoretical exhibition of each subject or group of subjects related, the students will resolve individualment the problems or exercises proposed by the teacher, as well as the tests provided on the Moovi platform.	20	A2 A3 A4	B1 B4	C9 C11	D1 D2

Other comments on the Evaluation

The student will have to cumplimentar a identification card in the platform MOOVI, attaching a recognizable photograph. This requirement is indispensable for the realization of the practices, seminars and different tests.

It is advised to the students use a e-mail adress of the University of Vigo to contact the professor by this way, identifying theirself (name and surnames, course and titulación) and indicating the subject.

It is advised the assistance to the professor lectures.

<u>Resolution of problems and/or exercises</u>: The average score of all problems/exercises must be equal or upper 5 (out of 10) to be taken into consideration in the final assessment.

<u>Seminars</u>: realization of the seminars is compulsory for passing the subject. The average score of seminars must be equal or upper 5 (out of 10) to be taken into consideration in the final assessment.

<u>Laboratory Practices</u>: realization of the practices and the exam and/or report of them is mandatory for passing the subject. The average score of the practices must be equal or upper 5 (out of 10) to be taken into account in the final evaluation.

<u>The final exam</u> will consist of a test of true/false questions and several questions or problems about all topics of the subject. **The average score of the final exam must be equal or upper 5 (out of 10) to passing the subject.**

2nd Opportunity (July call): Students who do not pass the final exam and must attend to the 2nd opportunity call, will keep the score of the parts tests that they passed during the course.

Global assessment option: The application for this evaluation option must be submitted in the time and manner determined by the Center, which will be published prior to the academic start. Failure to carry out the mandatory probes (Seminars and Laboratory Practices), without justification, eliminates the options of the global assessment and the 2nd opportunity to recover the content and the % corresponding to said activities.

The update oficial calendar of the final exams can be found at: http://mar.uvigo.es/alumnado/examenes/

Require of the alumnado that curse this subject a responsible behaviour and honesta. Consider inadmissible any form of fraud (copy or plaxio) encaminado to falsear the level of knowledges and destrezas achieved in all type of proof, report or work. The fraudulent behaviour pode involve suspend the subject a complete course. It will carry one internal register of these actuacions and, in case of reincidencia, it will ask the wool Reitoria to abertura of a file discipline.

Sources of information Basic Bibliography Feduchi E., Blasco I., Romero C.S. y Yáñez E., Bioquímica. Conceptos esenciales, 2ª Ed, 2015 Nelson D.L. and Cox M.M., Lehninger. Principios de Bioquímica, 7ª Edición, 2018 Tymoczko J.L., Berg J.M. y Stryer L., Bioquímica. Curso básico, 2ª Edicion, 2014 Voet D., Voet J.G. y Pratt C.W., Fundamentos de Bioquímica. La vida a nivel molecular, 4ª Edición, 2016 Complementary Bibliography Blas PastorJ.R., bqTest: 1000 preguntas tipo test de bioquímica para universitarios., 2013 Herrera E., Bioquímica Básica, 1ª Ed, 2014 Mathews C.K., Van Holde, K.E., Appling D.R. y Anthony-Cahill S.J., Bioquímica, 4ª Edición, 2013 McKee T. y McKee J.R., Bioquímica. La base molecular de la vida, 5ª Edición, 2015 Salway J.G., Una ojeada al metabolismo, 2ª Edición, 2002 Stryer L., Berg J.M. y Tymoczko J.L., Bioquímica., 7ª Edicion, 2013

Recommendations Subjects that continue the syllabus

Physiology of marine organisms/V10G061V01305

Subjects that it is recommended to have taken before Biology: Biology I/V10G061V01101

Biology: Biology I/V10G061V01101 Biology: Biology 2/V10G061V01106 Chemistry: Chemistry I/V10G061V01105 Chemistry: Chemistry 2/V10G061V01110