Teaching Guide				
Identifying Data				2018/19
Subject (*)	Biology		Code	610G01005
Study programme	Grao en Química			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	First	Basic training	6
Language	Spanish			
Teaching method	Face-to-face			
Prerequisites				
Department	Bioloxía			
Coordinador	Lamas Criado, Iban	E-mail	iban.lamas@udc.es	
Lecturers	Castro Castro, Antonio Manuel Díaz Prado, María Luz Lamas Criado, Iban	E-mail	antonio.castro@udc.es luz.diaz@udc.es iban.lamas@udc.es	
Web				
General description	A asignatura encóntrase no primeiro ano do grado, e o único precedente que posúen a maioría dos alumn@s, son os coñecementos de Bioloxía cursada en ensinanza secundaria. Esta materia inclúese na formación básica, polo que atópase no primer cuatrimestre do primeiro curso do grado, para dotar @ alumn@ dos coñecementos básicos necesarios para ó resto de asignaturas.			

Study programme competences / results	
Code	Study programme competences / results
A1	Ability to use chemistry terminology, nomenclature, conventions and units
A12	Ability to relate macroscopic properties of matter to its microscopic structure
A13	Understanding of chemistry of main biological processes
A15	Ability to recognise and analyse new problems and develop solution strategies
A16	Ability to source, assess and apply technical bibliographical information and data relating to chemistry
A20	Ability to interpret data resulting from laboratory observation and measurement
A22	Ability to plan, design and develop projects and experiments
A23	Critical standards of excellence in experimental technique and analysis
A24	Ability to explain chemical processes and phenomena clearly and simply
A25	Ability to recognise and analyse link between chemistry and other disciplines, and presence of chemical processes in everyday life
A27	Ability to teach chemistry and related subjects at different academic levels
B1	Learning to learn
B3	Application of logical, critical, creative thinking
B4	Working independently on own initiative
B5	Teamwork and collaboration
B6	Ethical, responsible, civic-minded professionalism
B7	Effective workplace communication
C1	Ability to express oneself accurately in the official languages of Galicia (oral and in written)
C6	Ability to assess critically the knowledge, technology and information available for problem solving

Learning outcomes			
Learning outcomes	Study programme competences / results		
- Comprender os fundamentos e a importancia da biotecnoloxía no contexto social e científico actual.	A1 A24 A25		

- Coñecer e comprender os procesos biolóxicos e as relacións entre o medio e os seres vivos.	A12 A15 A27	B6	
- Coñecemento das técnicas empleadas nun laboratorio de bioloxís. - Elección das técnicas más apropiadas para abordar o estudo dun determinado problema práctico.	A20 A22 A23	B3 B4 B5 B7	
- Coñecer os mecanismos asociados á dinámica dos procesos celulares.	A13 A16	B1	C6
- Coñecer e estudar a composición e estrutura celular e a súa relación e implicación no metabolismo.	A12 A13		C1

Contents	
Topic	**Sub-topic**
GROUP I: INTRODUCTION 1. Introduction GROUP II: CELLULAR BIOLOGY 2. Cell´s molecular composition 3. Cellular surface and membrane 4. The cytoplasm 5. Genetic expression and nucleus 6. Cell´s regulation GROUP III: EVOLUTION GENETIC 7. Genetic´s concepts 8. Evolution GROUP IV: DNA RECOMBINANT AND BIOTECHNOLOGY 9. DNA recombinant technology 10. Biotechnology GROUP V: ECOLOGY 11. Introduction to ecology	Lesson 1. Introduction to Biology´s history. . Lesson 2. Carbohydrates. Lípids. Nucleic Acids. Proteins Lesson 3: Structure of membranes. Functional diversity of membranes´proteins. Transport in membranes. Extracellular surface. Lesson 4. Structure and metabolic functions of cytosol. Lesson 5. Cellular genomic organization. Cromatin and cromosomes. DNA Replication . Transcription. genic expression regulation. Lesson 6. Cellular cycle. mytosis. Meiosis. Cellular death. Cellular differentiation. Lesson 7. The gen. Lesson 8. Evolution theory. Lesson 9. Genetic enginnering. Tema 10. Biotecnology process. Tema 11. Enviroment and distribution.
Practice lessons:	- Use of microscopy. - Observation and study of bacteria. - Observation and stydy of animal and vegetables cells. - Observation and study of plast (cloroplasts, cromoplasts y amiloplasts). - Osmotic process study. - Mitosis study. - Dna extraction. - Carbohydrates, lipids and proteins study.

Planning				
Methodologies / tests	**Competencies / Results**	**Teaching hours (in-person & virtual)**	**Student?s personal work hours**	**Total hours**
Mixed objective/subjective test	A1 A13 A16 A20 A22 A24 C1 C6	5.5	0	5.5
Directed discussion	A25 B6 B7 C1	9	9	18
Laboratory practice	A13 A15 A23 B3 B5	15	16.5	31.5
Guest lecture / keynote speech	A12 A13 A25 A27 B1 B4	27	67.5	94.5
Personalized attention		0.5	0	0.5
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	**Description**
Mixed objective/subjective test	During the course, two controls will be carried out on the theoretical contents of the subject, with questions of test type and short questions, as well as exercises. The final exam will consist of a written test on the contents taught in the practical part of the subject with short questions about processes and reactions made in the practices, as well as identification of structures in images. Also, the final theoretical exam will consist of test questions, short questions, definitions as well as exercises.
Directed discussion	In very small groups (10 students) will discuss content related to the subject. Likewise, test exercises and problems will be performed that will serve as a review of the concepts explained in the lectures. Questions will be presented, object of discussions directed by the teacher, to conduct debates among students on methodological and theoretical aspects related to the subject.
Laboratory practice	Some theoretical aspects related to the apparatus and the experimental methodologies will be approached and the manual skills of the simple chemical-biological techniques are acquired
Guest lecture / keynote speech	50-minute face-to-face sessions on some of the contents of the program. For a total use of these, it is recommended that the student has read, previously and on his own, the fundamental aspects of these subjects.

Personalized attention	
Methodologies	**Description**
Laboratory practice Guest lecture / keynote speech Mixed objective/subjective test Directed discussion	The student is free to ask all your questions during theoretical sessions (lectures , small groups) or practices . It also will have the ability to resolve any questions about the course by attending individual tutorials in the schedule of this (see schedule http://ciencias.udc.es/grao-en-bioloxia) . In the case of students with recognition of part time and dispensation academic medical exemption , it can use the same channels or can pose your questions via email.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Laboratory practice	A13 A15 A23 B3 B5	Realizarase un exame escrito (obrigatorio) sobre os contidos prácticos do tema será realizada, esta composta por preguntas e imaxes para identificar curtos. Esta proba representa os restantes 20% do total.	20
Mixed objective/subjective test	A1 A13 A16 A20 A22 A24 C1 C6	Haberá dous controis teóricos e controis obrigatorios ao longo do curso e un exame final (o termo) dos contidos teóricos do tema con cuestións de múltiple opción, preguntas curtas e exercicios. Tales controis serán responsables de 30% da nota teoría. O exame final consistirá por cuestións de múltiple opción, preguntas curtas e exercicios. Este exame final representará o 70% da nota teoría	80

Assessment comments

A presenza nas clases prácticas é condición indispensable para ser avaliado. Para superar a materia é necesario obterunha puntuación de 5 a 10 na parte teórica, así como parte práctica. Primeira oportunidade (xaneiro): O cálculo danota da parte teórica (xaneiro) está constituído pola suma dos controis durante o curso que computarán un 30%, máis o exame final de computación de 70%, e será requisito indispensable para obter unha puntuación mínimade 5 sobre 10 no cómputo xeral de teoría para que poida facer a media coa parte práctica. A calificación da parte prácticaserá obtida directamente desde o exame final práctico, e será requisito indispensable obter unha puntuaciónmínima de 5 sobre 10 para que poida facer media coa calificación xeral da parte teórica. As matrículas de honra, de ser o caso, terán preferencia concedelas na primeira das oportunidades concedidas (finais do primeiro semestre.)Será calificado como non presentado ao alumno que non realice ningunha das actividades propostas para o curso, comoprobas durante o semestre, así como probas avaliables da primeira oportunidade. O cálculo final dunhacalificación global constituirá a suma da calificación xeral teórica (80%), máis a calificación da parte práctica (20%) e debeser obtida unha puntuación mínima de 5 sobre 10 en cada unha das partes (teoría e práctica).Segunda oportunidade (Xullo): Os alumnos serán avaliados únicamente na nota teórico ou prácticoobtido nesta segunda oportunidade, constituíndo o 80% a parte teórica e 20% a parte práctica. A materia suspendida(o ano lectivo anterior) implica a execución e superar todas e cada unha das actividades listadas nesta guía tanto o teórica.

Sources of information	
Basic	BIBLIOGRAFÍA BÁSICA: - Curtis, H; Barnes, N.S; Schnek, A; Flores, G. "Biología". Ed. Panamericana (2006). Alberts, B y col. "Introducción a la Biología Celular". Ed. Omega (1999). Paniagua, R.; Nistal, M.; Sesma P.; Álvarez-Uria, M.; Anadón R.; Fraile, B.; Sáez, F.J. "Citología e Histología Vegetal y Animal". Ed. Interamericana McGraw-Hill (2007). Smith, T.M.; Smith, R.L. "Ecología". Ed. Pearson (2007). Libro.
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Other comments
El aprendizaje comprenderá: la incorporación de conceptos fundamentales sobre la materia, la familiarización con el trabajo en el laboratorio, la elaboración de memorias sencillas de prácticas y la búsqueda de información. Se recomienda: leer o trabajar sobre el tema de las lecciones magistrales con anterioridad, tomar las notas pertinentes durante las clases teóricas y prácticas.