



Teaching Guide

Teaching Guide				
Identifying Data			2021/22	
Subject (*)	New trends and applications in bioinformatics and biomedical engineering		Code	614522021
Study programme	Mestrado Universitario en Bioinformática para Ciencias da Saúde			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	1st four-month period	Second	Optional	3
Language	SpanishGalicianEnglish			
Teaching method	Hybrid			
Prerequisites				
Department	Ciencias da Computación e Tecnoloxías da InformaciónComputaciónEnxeñaría de ComputadoresFisioterapia, Medicina e Ciencias Biomédicas			
Coordinador	González Domínguez, Jorge	E-mail	jorge.gonzalezd@udc.es	
Lecturers	González Domínguez, Jorge Ladra González, Susana Puente Castro, Alejandro	E-mail	jorge.gonzalezd@udc.es susana.ladra@udc.es a.puentec@udc.es	
Web	moodle.udc.es			
General description	Nesta materia presentaranse as tendencias de investigación e ferramentas novedosas no ámbito da bioinformática e a informática para a saúde. Os temas poderán ser presentados por persoas relevantes do ámbito mediante charlas ou seminarios			
Contingency plan	In this case, only Teams, Moodle and e-mail tools will be used for any task related to the teaching of the subject. In case of connectivity problems on the part of the students, other alternatives without presence (such as telephone calls) will be evaluated.			

Study programme competences

Code	Study programme competences
A1	CE1 - Ability to know the scope of Bioinformatics and its most important aspects
A6	CE6 - Ability to identify software tools and most relevant bioinformatics data sources, and acquire skill in their use
A7	CE7 - Ability to identify the applicability of the use of bioinformatics tools to clinical areas.
B1	CB6 - Own and understand knowledge that can provide a base or opportunity to be original in the development and/or application of ideas, often in a context of research
B2	CB7 - Students should know how to apply the acquired knowledge and ability to problem solving in new environments or little known within broad (or multidisciplinary) contexts related to their field of study
B3	CB8 - Students to be able to integrate knowledge and deal with the complexity of making judgements from information that could be incomplete or limited, including reflections on the social and ethical responsibilities linked to the application of their skills and judgments
B4	CB9 - Students should know how to communicate their findings, knowledge and latest reasons underpinning them to specialized and non-specialized audiences in a clear and unambiguous way
B5	CB10 - Students should possess learning skills that allow them to continue studying in a way that will largely be self-directed or autonomous.
B6	CG1 - Search for and select the useful information needed to solve complex problems, driving fluently bibliographical sources for the field
B7	CG2 - Maintain and extend well-founded theoretical approaches to enable the introduction and exploitation of new and advanced technologies
C1	CT1 - Express oneself correctly, both orally writing, in the official languages of the autonomous community
C2	CT2 - Dominate the expression and understanding of oral and written form of a foreign language
C4	CT4 - Be able to analyze the real situation, formulate and implement solutions based on knowledge and aimed at the common good and the exercise of open, educated, critical, committed, democratic and solidary citizenship.
C5	CT5 - Understand the importance of entrepreneurial culture and know the means available to enterprising people
C6	CT6 - To assess critically the knowledge, technology and information available to solve the problems they face to.
C7	CT7 ? To maintain and establish strategies for scientific updating as a criterion for professional improvement.



C8	CT8 - Rating the importance that has the research, innovation and technological development in the socio-economic and cultural progress of society
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Learning outcomes			
Learning outcomes		Study programme competences	
Coñecer os aspectos máis relevantes das novas técnicas que surxen no campo de aplicación da Bioinformática e a Informática para as Ciencias da Saúde	AJ1	BJ1	CJ4
	AJ6	BJ2	CJ5
	AJ7	BJ3	CJ6
		BJ5	CJ7
		BJ7	CJ8
Coñecer as novas plataformas e ferramentas dispoñibles no campo da Bioinformática e a Enxeñería Biomédica	AJ1	BJ4	CJ4
	AJ6	BJ6	CJ5
	AJ7	BJ7	CJ6
			CJ7
			CJ8
Coñecer as novas liñas de investigación na área	AJ1	BJ3	CJ1
	AJ6	BJ5	CJ2
	AJ7		

Contents	
Topic	Sub-topic
Bloque I. Tendencias en biomédica y tecnologías identificadoras	Novas técnicas computacionais en Bioinformática e Enxeñería Biomédica
Bloque II. Tendencias en bioinformática	Novas liñas de investigación en Bioinformática e Enxeñería Biomédica

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student's personal work hours	Total hours
Seminar	A1 A6 A7 B1 B2 B3 B5 B7 C4 C8	6	0	6
ICT practicals	A1 A6 A7 B1 B2 B4 B5 B6 B7 C1 C2 C4	0	10	10
Oral presentation	A1 A6 A7 B1 B2 B3 B4 B5 B6 B7 C1 C2 C4 C6 C7 C8	10	25	35
Guest lecture / keynote speech	A1 A6 A7 B1 B2 C4 C5 C6 C7 C8	10	10	20
Personalized attention		4	0	4

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

Methodologies	
Methodologies	Description
Seminar	Para coñecer as tendencias no ámbito da bioinformática organizaranse seminarios principalmente coa participación de invitados de relevancia na investigación
ICT practicals	Os traballos para a avaliación levaranse a cabo a través de ordenador e serán defendidos públicamente
Oral presentation	O traballo levado a cabo durante o curso será defendido públicamente
Guest lecture / keynote speech	Os profesores e posibles invitados exporán mediante sesións presenciais as tendencias no ámbito da bioinformática e outros ámbitos da tecnoloxía aplicada a saúde



Personalized attention

Methodologies	Description
Oral presentation	Para levar acabo os traballos da materia que serán expostos públicamente, poderán levarse a cabo tutorías individuais ou grupais

Assessment

Methodologies	Competencies	Description	Qualification
Guest lecture / keynote speech	A1 A6 A7 B1 B2 C4 C5 C6 C7 C8	Asistencia e recollida de datos para a realización das prácticas a través das TIC e da exposición oral	10
Seminar	A1 A6 A7 B1 B2 B3 B5 B7 C4 C8	Asistencia e recollida de contidos dos seminarios para a traballo a través das TIC	10
ICT practicals	A1 A6 A7 B1 B2 B4 B5 B6 B7 C1 C2 C4	Traballo que recolle os contidos visto na materia	40
Oral presentation	A1 A6 A7 B1 B2 B3 B4 B5 B6 B7 C1 C2 C4 C6 C7 C8	Exposición pública dos traballos que recolleran os contidos das clases e seminarios	40

Assessment comments

Esta materia terá unha estrutura dinámica que dependerá das posibilidades de invitar a distintos investigadores relevantes no ámbito deste mestrado. A realización fraudulenta das probas ou actividades de avaliación, unha vez comprobada, implicará directamente a cualificación de suspenso "0" na materia na oportunidade correspondente.

Sources of information

Basic	- AMIA: American Medical Informatics Association (2017). Biomedical Informatics Core Competencies. https://www.amia.org/biomedical-informatics-core-competencies
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

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.