UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				2019/20
Subject (*)	Advanced medical visualization		Code	614522019
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	Spanish			
Teaching method	Face-to-face			
Prerequisites				
Department	Ciencias da Computación e Tecnoloxías da InformaciónComputación			
Coordinador	Ortega Hortas, Marcos	E-mail	m.ortega@udc.es	
Lecturers	Gonzalez Penedo, Manuel Ortega Hortas, Marcos Rouco Maseda, Jose	E-mail	manuel.gpenedo@udc.es m.ortega@udc.es jose.rouco@udc.es	
Web	moodle.udc.es			
General description	Aspectos Teóricos e Prácticos relacionados coa Visualización e o tratamento automáticos de datos adquiridos mediante diferentes modalidades de imaxe médica			

Study programme competences / results	
Code	Study programme competences / results
A1	CE1 - Ability to know the scope of Bioinformatics and its most important aspects
A2	CE2 ? To define, evaluate and select the architecture and the most suitable software for solving a problem in the field of bioinformatics
A3	CE3 ? To analyze, design, develop, implement, verify and document efficient software solutions based on an adequate knowledge of the theories, models and techniques in the field of Bioinformatics
A4	CE4 - Ability to acquire, obtain, formalize and represent human knowledge in a computable form for the resolution of problems through a computer system in any field of application, particularly those related to aspects of computing, perception and action in bioinformatics applications
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
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
C3	CT3 - Use the basic tools of the information technology and communications (ICT) necessary for the exercise of their profession and lifelong learning
C6	CT6 - To assess critically the knowledge, technology and information available to solve the problems they face to.
C8	CT8 - Rating the importance that has the research, innovation and technological development in the socio-economic and cultural progress of society

Learning outcomes	
Learning outcomes	Study programme competences / results

Comprender e interpretar o movemiento e a temporalidade en diferentes dominios médicos.	AJ1 AJ2 AJ3 AJ4	BJ1 BJ2 BJ5 BJ6 BJ7	CJ1 CJ3 CJ6 CJ8
Entender conceptos para a segmentación baseada en modelos.	AJ1 AJ2 AJ3 AJ4	BJ1 BJ2 BJ5 BJ6 BJ7	CJ1 CJ3 CJ6 CJ8
Comprender estratexias orientadas á visualización médica avanzada: representación do movemento, reconstrucción de estructuras, etc.	AJ1 AJ3 AJ4	BJ2 BJ5 BJ6 BJ7	CJ1 CJ3 CJ6 CJ8

Contents	
Topic	**Sub-topic**
Fundamentos de Visión Dinámica	Detección e Análise de movemento Rexistro temporal
Segmentación baseada en modelos	Contornos Activos Level Sets Modelos volumétricos
Técnicas de visualización para o soporte clínico	Modelos de visualización Aplicacións

Planning				
Methodologies / tests	**Competencies / Results**	**Teaching hours (in-person & virtual)**	**Student?s personal work hours**	**Total hours**
Laboratory practice	A3 A4	10	20	30
Oral presentation	B1 B2 B5 B6 B7 C1 C3 C6 C8	3	21	24
Objective test	A1 A2 A3 A4	1	0	1
Guest lecture / keynote speech	A1 A2 A3 A4	8	12	20
Personalized attention		0		0
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	**Description**
Laboratory practice	Boletines específicos para os temas presentados nas clases maxistrais
Oral presentation	Presentación do traballo feito sobre unha metodoloxía de visualización médica avanzada
Objective test	Exámen escrito para a avaliación dos coñecementos adquiridos
Guest lecture / keynote speech	Pesentación dos temas e desenvolvemento dos conceptos relacionados coa materia

Personalized attention	
Methodologies	**Description**
Oral presentation	Apoio para o desenvolvemento de contidos e a súa sintetización.

Assessment

Methodologies	Competencies / Results	Description	Qualification
Laboratory practice	A3 A4	Prácticas	15
Oral presentation	B1 B2 B5 B6 B7 C1 C3 C6 C8	Exposición pública	25
Objective test	A1 A2 A3 A4	Exame	60

Assessment comments

Sources of information	
Basic	
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.