UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				**2016/17**
Subject (*)	Fundamentos de intelixencia artificial		**Code**	614522003
Study programme	Mestrado Universitario en Bioinformática para Ciencias da Saúde			
Descriptors				
Cycle	**Period**	**Year**	**Type**	**Credits**
Official Master's Degree	1st four-month period	First	Optativa	6
Language	Galician			
Teaching method	Face-to-face			
Prerequisites				
Department	Computación			
Coordinador	Bolón Canedo, Verónica	**E-mail**	veronica.bolon@udc.es	
Lecturers	Bolón Canedo, Verónica	**E-mail**	veronica.bolon@udc.es	
Web				
General description				

Study programme competences	
Code	**Study programme competences**
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
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
C6	CT6 - To assess critically the knowledge, technology and information available to solve the problems they face to.

Learning outcomes			
Learning outcomes	**Study programme competences**		
Knowledge and application of the fundamental principles and techniques of AI and their practical application	AJ2 AJ3 AJ4	BJ1 BJ2 BJ6 BJ7	CJ1 CJ6

Contents	
Topic	**Sub-topic**
1. Introduction	1.1. An historical perspective
	1.2. Preliminary aspects
	1.3. General considerations

2. Problem-solving	2.1. Introduction to solving problems in AI
	2.2. The state space concept. Searching
	2.3. General characteristics of searching processes
	2.4. Pure search strategies
	2.5. Search strategies in state space
3. Structured Knowledge Representation	3.1. Introduction
	3.2. Declarative methods
	3.3. Procedural methods
	3.4. Examples and a practical case
	3.5. Production systems
4. Reasoning in AI	4.1 Basics of categorical reasoning
	4.2 Basics of Bayesian reasoning
5. Development of Intelligent Systems	5.1 Introduction to Knowledge Engineering
	5.2 Methodologies for knowledge modeling
	5.3 CommonKADS
	5.4 Case study

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Laboratory practice	B2 B6 B7 C1 C6	28	56	84
Guest lecture / keynote speech	A2 A3 A4 B1	14	28	42
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	Use of symbolic AI techniques to solve problems.
Guest lecture / keynote speech	Teaching the contents of the course, promoting involvement of students.

Personalized attention	
Methodologies	Description
Guest lecture / keynote speech Laboratory practice	Attendance and involvement of the students will be evaluated

Assessment			
Methodologies	Competencies	Description	Qualification
Guest lecture / keynote speech	A2 A3 A4 B1	Written test to evaluate the knowledge about the course	60
Laboratory practice	B2 B6 B7 C1 C6	Submission before the deadline and attendance will be evaluated	40

Assessment comments

Sources of information

Basic	Moret et al. (2005). Fundamentos de inteligencia artificial. Servicio de publicaciones de la UDC (2ª ed, 2ª imp)José T. Palma, Roque Marín Morales et al. (2008). Inteligencia artificial - Técnicas, métodos y aplicaciones. McGraw Hill (1ª ed.)Russell & Norvig (2004). Inteligencia artificial: un enfoque moderno. Pearson (2ª ed)
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Introdución á programación/614522001
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Intelixencia computacional para datos de alta dimensionalidad/614522024
Intelixencia computacional para bioinformática/614522012
Computación de altas prestacións en bioinformática/614522011
Other comments