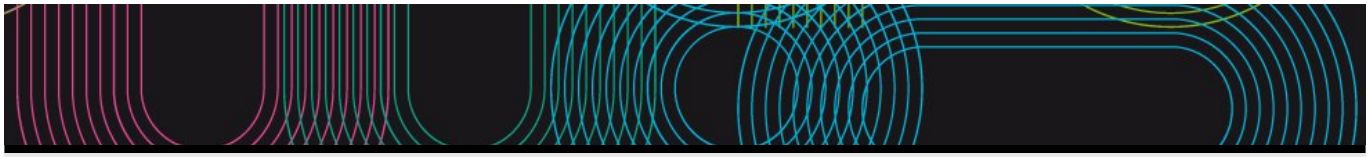
Universidade Vigo

Subject Guide 2023 / 2024



IDENTIFYING DATA				
Quantum computing and high performance computing				
Subject	Quantum computing and high performance computing			
Code	V05M198V01201			
Study programme	(*)Máster Universitario en Ciencia e tecnoloxías de información cuántica			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Optional	1st	2nd
Teaching language				
Department				
Coordinator				
Lecturers				
E-mail				
Web	http://guiadocente.udc.es/guia_docent/index.php?centre=614&ensenyament=614551&assignatura=614551009&any_academic=2023_24&any_academic=2023_24			
General description				

Training and Learning Results	
Code	
A8	Know the classical computing algorithms and strategies inspired by quantum computing: tensor networks, product states of matrices, etc.
A9	Know and know how to apply advanced aspects of quantum computing: quantum learning, efficient quantum architecture, mode of operation of two quantum accelerators, high-performance computing, quantum systems based on rules and applications to numerical calculation.
A10	Know scenarios of practical application of quantum computing in problems of scientific, technological and financial interest. Identify domains that exhibit quantum advantage. Know the institutions and companies that are actors in quantum computing, acquiring a perspective of the agenda that is reasonable to expect in the coming years.
B15	To have knowledge of high-level aspects of quantum computing: learning quantum machines, quantum simulators, architectures, etc.
C1	To analyze and break down a complex concept, examine each part and see how they fit together
C2	To classify and identify types or groups, showing how each category is different from the others
C3	To compare and contrast and point out similarities and differences between two or more topics or concepts

Expected results from this subject	
Expected results from this subject	Training and Learning Results
New	A8 A9 A10 B18 B18 B15 C1 C2 C3 C18 C18 D18 D18

Contents
Topic

Planning

	Class hours	Hours outside the classroom	Total hours

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

Methodologies

	Description

Personalized assistance

Assessment

Description	Qualification	Training and Learning Results

Other comments on the Evaluation

Sources of information

Basic Bibliography

Complementary Bibliography

Recommendations