UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				2021/22
Subject (*)	Master's Thesis		Code	614473111
Study programme	Mestrado Universitario en Computación de Altas Prestacións / High Performance Computing (Mod. Presencial)			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	2nd four-month period	First	Obligatory	15
Language	SpanishGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Enxeñaría de Computadores			
Coordinador	González Domínguez, Jorge	E-mail	jorge.gonzalezd@udc.es	
Lecturers	Andrade Canosa, Diego Fraguela Rodriguez, Basilio Bernardo González Domínguez, Jorge Padron Gonzalez, Emilio Jose Rodríguez Álvarez, Gabriel	E-mail	diego.andrade@udc.es basilio.fraguela@udc.es jorge.gonzalezd@udc.es emilio.padron@udc.es gabriel.rodriguez@udc.es	
Web	aula.cesga.es			
General description	The objective of the TFM is the analysis, design, implementation and validation of a project, carried out individually, related to High Performance Computing and in which some of the competences acquired are emphasized. It can be developed in a company or entity with proven experience in R&D projects, being co-supervised by a professional in the field. In any case, the project must integrate innovation components that go beyond the mere parallelization of an application. The TFM must promote the contribution of added value by the student in innovative projects, and its direct relationship with the labor market or with some aspect of research. The objective of the Final Master's Project (TFM) is to introduce the student to a research or development topic with concrete and achievable objectives in a short space of time.			
Contingency plan	Due to the special nature of this subject, the contingency plan will involve that the communication between the student and the teacher will happen online.			

Study programme competences / results	
Code	Study programme competences / results
A8	CE8 - Be able to apply the acquired knowledge, capabilities and aptitudes to the profesional environment, planning, managing and evaluating project in the high performance computing field
A9	CE9 - Be able to state, model and solve problems that require high performance computing techniques
B1	CB6 - Possess and understand the knowledge that give a baseline or opportunity to be original in the development and/or application of ideas, often in a research environment
B2	CB7 - The students have to know how to apply the acquired knowledge and their capacity to solve problems in new or hardly explored environment inside wider contexts (or multidiscipinary) related to its area of development
B3	CB8 - The students have to be able to integrate knowledge and face the complexity to make judgments from information, despite being partial and limited, includes reflexions about the social and ethical responsabilities linked to the application of their judgements and knowledge
B4	CB9 - The students have to be able to communicate their conclusions, their knowledge and the reasons that hold them to specialized and non specialized audience in a clear and unambiguous manner
B5	CB10 - The students have to possess learning skills that allows them to continue to study in a mainly self-driven or autonomous manner
B6	CG1 - Be able to search and select useful information to solve complex problems, using the bibliographic sources of the field
B7	CG2 - Elaborate adqueately and originally written essays or motivated reasonings, write planings, work projects, scientific papers and formulate reasonable hypothesis
B8	CG3 - Be able to maintain and extend properly funded theoretical hypothesis to allow the introduction and exploitation of novel and advanced technologies in the field

B9	CG4 - Be able to plan and do research, development and innovation tasks in high performance computing related environments
C1	CT1 - Use the basic technologies of the information and computing technology field required for the professional development and the long-life learning
C3	CT3 - Be able to manage time and resources: develop plannings, priorize activities, identify criticism, establish and meet deadlines
C4	CT4 - Value the importance of research, innovation and the technological development in the socioeconomical and cultural advance of the society
C5	CT5 - Understand the importance of the enterpeneurship culture and know the resources available for entrepeneurs

Learning outcomes			
Learning outcomes	Study programme competences / results		
Integrate the knowledge acquired to apply them to a specific research or development work.	AJ8 AJ9	BJ1 BJ2 BJ3	CJ1 CJ3
Present and defend the results of the work in front of a specialized audience.		BJ4 BJ5 BJ6 BJ7 BJ8 BJ9	CJ4 CJ5

Contents	
Topic	Sub-topic
Analysis, design, implementation and validation of a project related to High Performance Computing. The work will consist in the study of a research and/or development subject in the field of HPC with concrete objectives achievable in a short space of time. For its development two options will be available: a) The realization linked to a practice developed in the period of professional practices in institutions or companies. b) The independent realization of these practices, which typically allow the student to be introduced in a practical way in a research work in any of the lines of the groups to which the teaching team belongs. In any case, at the end of the work the student must present a final report and defend the work before a specialized commission.	.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Supervised projects	A8 A9 B1 B2 B3 B4 B5 B6 B7 B8 B9 C1 C3 C4 C5	0	300	300
Personalized attention		75	0	75

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

Methodologies	
Methodologies	**Description**
Supervised projects	Personal work of the student: consultation of bibliography, autonomous study, development of programmed activities, preparation of presentations and works

Personalized attention	
Methodologies	**Description**
Supervised projects	Follow-up office hours with project tutors to make contact with the TFM, planning, advice, practical work supervised in the laboratory, review of documentation, memory and presentation

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Supervised projects	A8 A9 B1 B2 B3 B4 B5 B6 B7 B8 B9 C1 C3 C4 C5	Continuous monitoring by the tutors of the work and approval in the memory of the project. Evaluation of the work by a commission made up of specialist teachers from the area. The qualification system will be the one indicated for the master's degree in the regulations.	100

Assessment comments

Sources of information	
Basic	Dadas as peculiaridades desta materia, resulta imposible especificar unha bibliografía xeral válida para todos os TFM que se van a desenvolver. A bibliografía específica de cada proxecto estará especificada en cada un das diferentes propostas de proxectos aprobadas pola Comisión Académica do máster.
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.