



## Teaching Guide

Identifying Data				
Subject (*)			Code	2023/24
Project			610441023	
Study programme				
Máster Universitario en Bioloxía Molecular, Celular e Xenética				
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	Yearly	First	Obligatory	12
Language	SpanishFrenchGalicianEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	BioloxíaCiencias da Computación e Tecnoloxías da InformaciónFisioterapia, Medicina e Ciencias BiomédicasPsicología			
Coordinador				
Lecturers	Arufe Gonda, María del Carmen Becerra Fernandez, Manuel Bernal Pita da Veiga, María de los Ángeles Castro Castro, Antonio Manuel Cerdan Villanueva, Maria Esperanza De Castro De Antonio, María Eugenia Fafián Labora, Juan Antonio Folgueira Otero, Mónica Freire Picos, María Ángeles Gonzalez Siso, Maria Isabel Laffon Lage, Blanca Martinez Lage, Andres Pomar Barbeito, Federico Rioboo Blanco, Carmen Rodriguez Belmonte, Esther Sangiao Alvarellos, Susana Silvar Pereiro, Cristina Valdiglesias García, Vanessa Vizoso Vázquez, Ángel José		E-mail	maria.arufe@udc.es manuel.becerra@udc.es angeles.bernal@udc.es antonio.castro@udc.es esper.cerdan@udc.es m.decastro@udc.es juan.labora@udc.es m.folgueira@udc.es maria.freirep@udc.es isabel.gsiso@udc.es blanca.laffon@udc.es andres.martinez@udc.es federico.pomar@udc.es carmen.rioboo@udc.es esther.belmonte@udc.es susana.sangiao@udc.es c.silvar@udc.es vanessa.valdiglesias@udc.es a.vizoso@udc.es
Web	<a href="http://ciencias.udc.es/MBMCG/">http://ciencias.udc.es/MBMCG/</a>			
General description	<p>Coordination: María Esperanza Cerdán Villanueva</p> <p>It is an individual work carried out by the student under the direction of one of the professors of the Master and in which he will approach research in one of the thematic areas of the Master.</p> <p>The offer of experimental works by the teachers is updated each course and the list of topics for the TFM realization is published on the WEB in June of the previous course</p>			

## Study programme competences

Code	Study programme competences
A1	Skills of working in a sure way in the laboratories knowing operation handbooks and actions to avoid incidents of risk.
A2	Skills of using usual techniques and instruments in the cellular, biological and molecular research: that are able to use techniques and instruments as well as understanding potentials of their uses and applications.
A3	Skills of understanding the functioning of cells through the structural organization, biochemistry, gene expression and genetic variability.
A8	Skills of having an integrated view of the previously acquired knowledge about Molecular and Cellular Biology and Genetics, with an interdisciplinary approach and experimental work.
A13	Skills to become a professional in health, pharmacy, veterinary, animal production, biotechnology or food sectors.
B1	Analysis skills to understand biological problems in connection with the Molecular and Cellular Biology and Genetics.



B2	Skills of decision making for the problem solving: that are able to apply theoretical knowledges and practical acquired in the formulation of biological problems and the looking for solutions.
B3	Skills of management of the information: that are able to gather and to understand relevant information and results, obtaining conclusions and to prepare reasoned reports on scientific and biotechnological questions
B4	Organization and work planning skills: that are able to manage the use of the time as well as available resources and to organize the work in the laboratory.
B5	Ability to draft, represent, analyze, interpret and present technical documentation and relevant data in the field of the branch of knowledge of the master's degree in the native language and at least in another International diffusion language.
B6	Skills of team work: that are able to keep efficient interpersonal relationships in an interdisciplinary and international work context, with respect for the cultural diversity.
B7	Personal progress skills : that are able to learn from freelance way, adapting to new situations, developing necessary qualities as the creativity, skills of leadership, motivation for the excellence and the quality.
B8	Critical reasoning skills and ethical commitment with the society: sensitivity in front of bioethical problems and to the ones related to the natural resource conservation
B9	Skills of preparation, show and defense of a work.
B11	Possess and understand knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, often in a research context
B12	That students know how to apply the knowledge acquired and their ability to solve problems in new or little-known environments within broader (or multidisciplinary) contexts related to their area of ??study
B13	That students are able to integrate knowledge and face the complexity of formulating judgments based on information, which, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments
B14	That students know how to communicate their conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way
B15	That students possess the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous
C1	Ability to express oneself correctly, both orally and in writing, in the official languages of the autonomous community
C2	Ability to know and use appropriately the technical terminology of the field of knowledge of the master, in the native language and in English, as a language of international diffusion in this field
C3	Using ICT in working contexts and lifelong learning.
C4	Acting as a respectful citizen according to democratic cultures and human rights and with a gender perspective.
C5	Understanding the importanceof entrepreneurial culture and the useful means for enterprising people.
C6	Acquiring skills for healthy lifestyles, and healthy habits and routines.
C7	Developing the ability to work in interdisciplinary or transdisciplinary teams in order to offer proposals that can contribute to a sustainable environmental, economic, political and social development.
C8	Valuing the importance of research, innovation and technological development for the socioeconomic and cultural progress of society.
C9	Ability to manage times and resources: developing plans, prioritizing activities, identifying critical points, establishing goals and accomplishing them.

## Learning outcomes

Learning outcomes	Study programme competences
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The student will do an experimental work integrated into a research group or, alternatively, will undertake a personal research project; in both cases under the direction of a doctor. The personal research work is not just a literature review, but implies the development of a project. The work will be written and then exposed and defended in public session. The rules of TFM are in the WEB of the Master	AR1	BR1	CC1
	AR2	BR2	CC2
	AR3	BR3	CC3
	AR8	BR4	CC4
	AR13	BR5	CC5
		BR6	CC6
		BR7	CC7
		BR8	CC8
		BR9	CC9
		BC1	
		BC2	
		BC3	
		BC4	
		BC5	

Contents	
Topic	Sub-topic
The specific topics of the TFM work of each academic year will be announced at the beginning of the first semester, based on enrollment and availability of teachers to guide them. Generic topics and contact details of teachers are released before the pre-registration period.	Os temas concretos dos traballos do Mestrado de cada curso académico daránse a coñecer ao principio do primeiro cuatrimestre en función dos alumnos matriculados e da dispoñibilidade de profesores para dirixirlos. Os temas xenéricos e profesores de contacto se dan a coñecer antes do período de pre-inscrición.

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student's personal work hours	Total hours
Introductory activities	C7	2	0	2
Research (Research project)	A2 A1 A3 A8 A13 B1 B3 B2 B4 B6 B7 B8 C2 C3 C4 C5 C6 C7 C8 C9	112	20	132
Directed discussion	A8 B1 B7 B8 B11 B12 B13 B15 C6 C8	6	12	18
Oral presentation	B5 B9 B14 C1 C3	0	20	20
Summary	A3 A8 B3 B9 C1 C2	0	70	70
Document analysis	A3 B3 C2	0	50	50
Personalized attention		8	0	8
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Introductory activities	Aimed at selecting the theme / Director
Research (Research project)	Laboratory work or project
Directed discussion	Data analysis and discussion with director / tutor ahead of the drafting of conclusions
Oral presentation	Public exhibition and defence
Summary	Preparation of the writing summary of the work (Memoria TFM)



Document analysis	Bibliographic search to define &quot;state of the art&quot; in the written memory
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## Personalized attention

Methodologies	Description
Oral presentation Introductory activities Research (Research project) Directed discussion Document analysis Summary	The Personalized attention hours will be distributed by the director / tutor

## Assessment

Methodologies	Competencies	Description	Qualification
Oral presentation	B5 B9 B14 C1 C3	The competences achieved in the analysis of the documentary sources, the written report, presentation and public defense of the work are evaluated using a rubric used by members of the evaluating committee and published in the web of the master.	30
Research (Research project)	A2 A1 A3 A8 A13 B1 B3 B2 B4 B6 B7 B8 C2 C3 C4 C5 C6 C7 C8 C9	The director of the TFM evaluates these competencies through the rubric published on the website of the master.  The % of the final score may represent 30% or less at the discretion of the evaluating committee.	30
Summary	A3 A8 B3 B9 C1 C2	The competences achieved in the analysis of the documentary sources, the written report, presentation and public defense of the work are evaluated using a rubric used by members of the evaluating committee and published in the web of the master.	40

## Assessment comments

FRAUDULENT ACTIVITIES. In the situation that any fraudulent activity is observed during tests or evaluation activities, the measures established in current University regulations will be taken

## Sources of information

Basic	Serán específicas para cada traballo e na maior parte buscadas polo propio alumno
Complementary	Serán específicas para cada traballo

## 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



**Gender Perspective** According to the different regulations applicable to university teaching, the gender perspective must be incorporated in this subject (non-sexist language will be used, bibliography of authors of both sexes will be used, the intervention of male and female students in class will be encouraged...) We will work to identify and modify sexist prejudices and attitudes and will influence the environment to modify them and promote values of respect and equality. Situations of gender discrimination should be detected and actions and measures will be proposed to correct them.

**Green Campus Program Faculty of Sciences** To help achieve an immediate sustainable environment and comply with point 6 of the "Environmental Statement of the Faculty of Science (2020)", any documentary homework to be carried out in this subject:

- a. They will be requested mostly in virtual format and computer support.
- b. If on paper: - No plastics will be used. - Double-sided printing shall be used. - Recycled paper shall be used. - Drafts shall be avoided.

(\*) 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.