



IDENTIFYING DATA

Scientific Literature and Writing in Biological Sciences

Subject	Scientific Literature and Writing in Biological Sciences			
Code	V02M123V01101			
Study programme	(*)Máster Universitario en Ciencias Biolóxicas: Biología Molecular, Computacional e Ambiental e Bio-Industrias			
Descriptors	ECTS Credits	Type	Year	Quadmester
	3	Mandatory	1st	1st
Language	English			
Department				
Coordinator	Devesa Rey, Rosa			
Lecturers	Devesa Rey, Rosa			
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Web				
General description	The aim of this course is to obtain basic knowledge about scientific terminology, manage basic tools for bibliographic reviews, understand the structure and contents of scientific papers and reports and be able to express and communicate the research results on biology.			

Competencies

Type A	Code	Competences Specific
	A1	(*)To know the scientific method and the correct use of the scientific terminology as well as to acknowledge the contribution that scientific research provides to the overall knowledge and professional practice.
	A2	(*)Ability to describe and to analyse biological diversity, the mechanisms determining the interactions with the biotic and abiotic environment and being able to select those which might have technical applications.
	A3	(*)Ability to manage and/or to develop basic tools for validating and analysing data by means of statistics and bioinformatics.
	A4	(*)To know the ethical and legal aspects governing the collection and the handling of biological samples, organisms and habitats.
	A5	(*)Ability to design, evaluate and implement models of biological structures, systems and processes.
	A6	(*)To learn the sampling techniques and the instrumental methodologies, in the field and laboratory, for their application in the Biological Sciences
	A7	(*)To have an integrated view of the R&D processes and their possible transfer to the industrial sector. Planning and supervising facilities together with managing their human and economic resources.
	A8	(*)Ability to classify, evaluate, conserve, restore and manage natural and productive systems. Developing and implementing land management and sustainability plans.
	A9	(*)To understand and know how to apply quality control systems and safety protocols in any biological laboratory of the public or private sector.
	A10	(*)To acquire the professional ability to teach and spread Biology and to offer expertise advice for elaborating scientific, technical and socioeconomic biology reports. Address environmental consulting.

A11 (*)To perform an individual Master Project (critical and in-depth study) under the supervision of a tutor in a research or working environment demonstrating that skills have been acquired.

Type B Code Competences Transversal

B1	(*)Dissemination of results and conclusions of the biological studies, in oral and written English, through complex presentations that address ideas related with R&D in Biology.
B2	(*)Managing computational, laboratory, field and industrial techniques in order to obtain, process and apply the acquired information.
B3	(*)Disseminating and broadcasting ideas in contexts both academic and non-specialised.
B4	(*)Reflecting on social and ethical responsibilities.

Learning aims

Subject competences	Typology	Competences
CB6 - Poseer y comprender conocimientos que aporten una base u oportunidad de ser originales en el desarrollo y/o aplicación de ideas, a menudo en un contexto de investigación	know	A1
CB9 - Que los estudiantes sepan comunicar sus conclusiones y los conocimientos y razones últimas que las sustentan a públicos especializados y no especializados de un modo claro y sin ambigüedades	Know How	A10
CB10 - Que los estudiantes posean las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo	Know be	A10
CG1 - Desarrollo de la capacidad de razonamiento crítico y autocrítico	Know How	B3
CG4 - Capacidad de planificación y organización para definir fines, objetivos y prioridades del trabajo a desempeñar, así como organizar plazos y recursos	Know How	A11 B1 B3
CG6 - Compromiso ético en la realización de trabajos sin plagios; ética profesional y como investigador	Know be	A1
CT1 - Difusión de resultados y conclusiones de los estudios biológicos, en inglés oral y escrito, a través de presentaciones complejas que aborden ideas relacionadas con la I+D+i en Biología	Know How	B1 B3 B4
CT2 - Manejo de técnicas computacionales, de laboratorio, campo e industriales para obtener información y saber procesarla y utilizarla	Know How	B2
CE1 - Conocer el método científico y utilizar correctamente la terminología científica, así como saber valorar y apreciar las aportaciones que proporciona la investigación científica al conocimiento y la práctica profesional	know	A1
CE3 - Capacidad para manejar y/o desarrollar herramientas básicas para la validación y el análisis de datos mediante la estadística y la bioinformática	Know How	A3
CE10 - Adquirir la habilidad profesional para enseñar y difundir la biología y ofrecer asesoramiento y peritaje de informes científico-técnicos y socioeconómicos en el ámbito de la Biología. Dirección de consultorías ambientales	know	A10

Contents

Topic	
1) Introduction to scientific literature	Basis and concepts
2) Where to find the most relevant information: use of databases	Sources of information
3) Top five things beginners need to know about databases	First steps
4) How to communicate in biological sciences (I)	Are you sure of your own objectives as speaker? Do you understand the expectations and background of your audience? Have you emphasized main points?
5) How to communicate in biological sciences (II) - Poster presentations	Five tips when preparing poster presentations (visual attractiveness, quality of information, relevance, originality, balance of text, graphics and illustrations)

6) How to approach writing in Biology

Scientific writing is clear, concise and disciplined

Writing scientific papers, reports

Applying for fellowships, letters of application, cover letter, research proposals

Planning

	Personalized attention	Assessment	Ordinary class hours A	Face-to-face hours outside the classroom Guided academic environment B	Student's work factor C	Outside the classroom hours D	Total hours (A+B+D) E
Integrated methodologies	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10	0	0	30	40
Practice in computer rooms	<input type="checkbox"/>	<input type="checkbox"/>	5	0	0	28	33
Jobs and projects	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2	0	0	0	2
Total hours E:							75
Work load in UVIGO ECTS credits:							3

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

Methodologies

Description
Integrated methodologies
Practice in computer rooms Classwork with computer rooms

Personalized attention

Description
Integrated methodologies Provide guidance and solve any question that the students may have in relation to the subject.

Assessment

Description	Qualification
Integrated methodologies Continuous assessment through monitoring of classroom work	20
Jobs and projects The students will deliver a report about their jobs and projects	80

Other comments and second call

Sources of information

MacMillan, V., Writing papers in the biological sciences, Fifth Edition, 2011, Palgrave MacMillan

Gustavii, B., How to write and illustrate a scientific paper, 2008, Cambridge University Press

Recommendations

Subjects that continue the syllabus

Innovation, R&D Management and Intellectual Property in Bio-Industries/V02M123V01215

Subjects that it is recommended to have taken before

Data Cleaning and Manipulación/V02M123V01104

Experimental Design And Data Analyses/V02M123V01102