



IDENTIFYING DATA

Chemical analysis of fishery products. Biotic and abiotic contaminants. Quality control in the laboratory.

Subject	Chemical analysis of fishery products. Biotic and abiotic contaminants. Quality control in the laboratory.			
Code	V11M085V02106			
Study programme	Máster Universitario en Ciencia y Tecnología de Conservación de Productos de la Pesca			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Mandatory	1st	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Longo González, María Asunción			
Lecturers				
E-mail				
Web	http://http://webs.uvigo.es/pesca_master/			
General description	This course is intended for students to acquire the necessary knowledge about the chemical composition and nutritional aspects of fishery and aquaculture products. Likewise, aspects related to the analysis of biotic and abiotic contaminants (heavy metals, marine biotoxins, biogenic amines, etc.) in them will be delved into, indicating the most appropriate analytical methodology in each case and the basic tools that allow data to be obtained. quality in the laboratory.			

Training and Learning Results

Code	
A1	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.
A4	That students know how to communicate their conclusions, and the knowledge and ultimate reasons that sustain them, to specialized and non-specialized audiences in a clear and unambiguous way.
A5	That students have the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.
B1	That the students acquire the comprehension, analysis and synthesis capacities.
B5	That the students develop the abilities of teamwork, enriched by the pluridisciplinarity.
C3	Acquire basic knowledge about laboratory analytical control of fishery products, including the biotic and abiotic contaminants potentially present in them.
D1	Ability to understand the meaning and application of the gender perspective in the different fields of knowledge and professional practice with the aim of achieving a more just and egalitarian society.
D2	Sustainability and environmental commitment. Equitable, responsible and efficient use of resources.
D5	Commitment to ethics in the profession and in society.

Expected results from this subject

Expected results from this subject	Training and Learning Results
That students know the chemical composition and nutritional aspects of fishery products and aquaculture.	A1 B1 C3 D1 D2

That the students know the techniques of atomic and chromatographic spectroscopy in the analysis of fishing products	A4 B1 B5 C3 D2
That the students know the biotic and abiotic contaminants and their analysis.	A4 A5 B1 C3 D1 D5
That the students know the metallic toxins, amines and marine biotoxins and their analysis.	A1 A4 B5 C3 D1 D2
That the students know the quality control in an analytical laboratory, reference materials and validation.	A4 A5 B5 C3 D2 D5

Contents

Topic

1. Chemical composition and nutritional aspects (*) of fishery and aquaculture products.
 2. The analytical process of decision making and (*) experimentation to consider. Analytical methodology.
 3. Biotic and abiotic contaminants and their (*) analysis.
 4. Metallic toxins: speciation and analysis. (*)
 5. Biogenic amines and their analysis. (*)
 6. Marine biotoxins and their analysis. (*)
 7. Quality control in the analytical laboratory. (*)
Reference materials. Validation.
- (*)TEMA 8. Técnicas cromatográficas acopladas a (*)* espectrometría de masas.

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	16	40	56
Case studies	4	7	11
Seminars	2	2	4
Objective questions exam	1	1	2
Self-assessment	1	1	2

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

Methodologies

	Description
Lecturing	Explanation by the lecturer of the contents of the course, theoretical bases and exercises to be developed by the student. Blackboard and audiovisual means will be used.
Case studies	Resolution of cases, doubts and queries both individually or in a small group regarding the follow-up and study of the course contents.
Seminars	Personalized and/or group tutorials: student interviews with the course's teaching staff for advice / development of activities of the learning process.

Personalized assistance

Methodologies Description

Lecturing	The lecturers will answer the questions posed by the students, in face-to-face or online tutorials, or by email.
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Seminars	The student receives, in group and/or individually, advice from the teacher on the theoretical and practical concepts of the subject, for the development of the objectives of the course.
Case studies	The student will be guided in the acquisition of basic skills and problem solving related to the subject matter of study. The progress of the student will be monitored.

Assessment

	Description	Qualification	Training and Learning Results			
Lecturing	The attendance and participation of the students in the classes, in the discussion of contents and exercises, will be evaluated.	20	A1 A4	B1	C3	D1 D2
Case studies	Problem solving and practical cases will be evaluated, as well as the student's autonomous work.	20	A4 A5	B5	C3	D2 D5
Objective questions exam	There will be an exam with multiple choice questions that will evaluate the theoretical and practical knowledge acquired in the course.	40	A4 A5	B1 B5	C3	D1 D5
Self-assessment	Test-type questionnaires will be carried out through the teaching platform, so that students can evaluate their degree of acquisition of the subject's competences.	20	A4 A5	B1 B5	C3	D1 D5

Other comments on the Evaluation

To pass the course, the student must obtain a grade equal to or greater than 4.5 points out of 10 in the final exam. In case of not reaching this grade, a "Fail" grade will be assigned, with the numerical value of the grade obtained in the final exam.

Sources of information

Basic Bibliography

Ruiter A., **El pescado y los productos derivados de la pesca: composición, propiedades nutritivas y estabilidad**, Ed. Acribia,

Valcarcel M, **Principios de Química Analítica**, Springer-Verlag Ibérica, Barcelona.,

Ashurst P.R., Dennis M.J., **Analytical Methods of Food Authentication**, Black Academic and Professional, London.,

Watson, D.H., **Natural Toxicants in Food**, Academic Press,

Complementary Bibliography

Sorensen H., Sorensen S. (, **Chromatography and capillary electrophoresis in food analysis**, Royal Society of Chemistry, London,

Ebdon L., Pitts L., Cornelis R., Crews H., Donard O.F.X., Quevauviller Ph., **Trace Element Speciation for Environment Food and Health**, Royal Society of Chemistry, UK,

D'Mello J.P.F., **Food Safety: Contaminants and Toxins**, CABI Publishing, USA.,

Campañó Beltrán R., Ríos A, **Garantía de la calidad en los laboratorios analíticos**, Ed. Síntesis, Madrid,

Recommendations

Other comments

In case of discrepancies, the Spanish version of this guide will prevail.