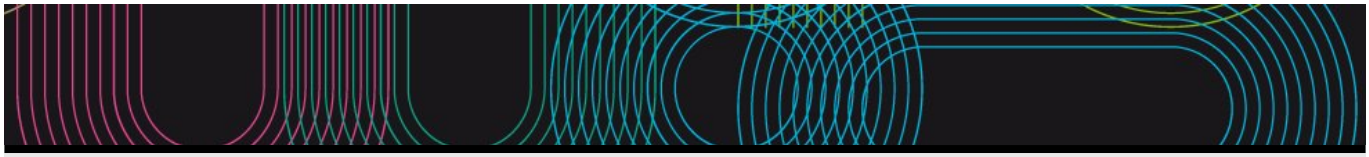

IDENTIFYING DATA				
Quality of fishery and aquaculture products				
Subject	Quality of fishery and aquaculture products			
Code	V11M085V02303			
Study programme	Máster Universitario en Ciencia y Tecnología de Conservación de Productos de la Pesca			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	5	Mandatory	2nd	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Longo González, María Asunción			
Lecturers	Barros Velázquez, Jorge García Cabado, Ana Goicoechea Lamas, Irene Longo González, María Asunción Losada Iglesias, Vanesa Quintela Porro, María Corina			
E-mail	mlongo@uvigo.es			
Web	http://pesca_master.webs.uvigo.es			
General description	In this subject the modifications of the organoleptic characteristics that occur after the capture of the fish and the effects of refrixeration and confection on the loss of freshness of the fishing products, as well as the freshness determination methods that exist. Students will be studied Methods of recognizing food alterations during storage and how to detect the biochemical changes subsequent to the capture and during conservation. The microbiological criteria and procedures to analyze fish quality and related legislation. Even the quick recognition tests will be studied and specific techniques of the alterations of frozen foods and preserved in state frozen.			

Training and Learning Results	
Code	
A2	That students know how to apply the knowledge acquired and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.
A3	That students are able to integrate knowledge and face the complexity of making judgments based on information that, being incomplete or limited, includes reflections on social and ethical responsibilities linked to the application of their knowledge and judgments.
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.
B1	That the students acquire the comprehension, analysis and synthesis capacities.
B2	That students develop oral and written communication skills in the two co-official languages of autonomy (Spanish and Galician).
B3	That the students develop the skills to perform experimental work, handling of material and biological elements and related programs.
C11	Approach to quality control of each of the production lines of fishery products. Basic knowledge of product quality management.
C12	Acquire basic knowledge and interpret the legislation applicable to the facilities where the handling and treatment of fishery products is carried out along the commercial chain: hygiene, labeling, food safety, plant self-control (APPCC), etc.

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.
D3	Autonomous work capacity and decision making.
D5	Commitment to ethics in the profession and in society.

Expected results from this subject

Expected results from this subject	Training and Learning Results
Understand the modification of organoleptic characteristics after capture.	A2 B1 B2 C11 C12 D1 D2
Appreciate the effects of refrigeration and freezing on the loss of freshness of the products of fishing.	A3 A4 B1 B2 C11 C12 D1 D2 D5
Know and interpret the methods of determination of freshness.	A2 A3 B2 B3 C11 D1 D5
Know the methods of recognition of food alterations during storage.	A2 A3 B1 B2 C11 C12 D2 D3
Detect biochemical changes subsequent to capture and during conservation.	A2 A3 A4 B2 B3 C11 C12 D2 D3 D5
Know the microbiological criteria and procedures to analyze fish quality and related legislation.	A2 A3 B1 B2 C11 C12 D2 D3 D5
Know the rapid recognition tests and specific techniques of the alterations of frozen foods and preserved in frozen state.	A2 B2 C11 C12 D3 D5

Understand the criteria and procedures for quality control of packaging and for the detection of defects.	A2 B1 B2 C11 C12 D1 D2
Know the quality control of each of the lines of preparation of PPAs.	A3 B2 B3 C11 C12 D1 D3 D5
Manage the regulations related to the technical-legal criteria applicable to the different PPAs.	A3 A4 B3 C11 C12 D1 D2
Acquire the basic knowledge of product quality management.	A2 A3 B1 B2 C11 C12 D2 D3
NewAcquire basic knowledge about inspection of frozen fish. Intrinsic procedures and characteristics.	A2 A4 B2 B3 C11 C12 D3 D5
Know the means, materials and machines necessary for the inspection and distinguish the phases and the main aspects of this process.	A2 A4 B1 B2 C11 C12 D2 D3 D5
Know and interpret the methods of product sampling and evaluation.	A3 A4 B2 B3 C11 C12 D1 D2

Contents	
Topic	
ITEM 1. Basic aspects of quality control of fishery and aquaculture products (PPAs).	-Subsequent organoleptic and biochemical changes capture it. - Effects of refrigeration on loss of freshness. - Modifications of fish constituents during the processing and storage. - Abiotic contaminants.
ITEM 2. Related Microbiological Aspects with the conservation of fish.	-Biotoxins marine. - Legislative advances and alternative methods.

ITEM 3. Physical methods of quality control of fishery products	Rheology of gels for the determination of physical properties: 1) Oscillatory methods (test in tension sweeps and sweep of frequency; 2) Static methods (load-recovery test temperature constant: determination of gel strength, exponent of relaxation and relax time
ITEM 4. Quality control in containers. Defects most common in packaged products.	- Know the methods of recognition of defects. - Know the guidelines for action in the daily practice of the industry.
ITEM 5. Practical Aspects	- Determination of sensory, chemical and microbiological parameters of quality, - Nutritional composition, presence of additives and contaminants.

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	26	56	82
Laboratory practical	10	25	35
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	Exhibition by the teacher of the contents on the subject matter of study, theoretical bases and / or exercise or projects to be developed by the student.
Laboratory practical	Laboratory practical classes: Determination of sensory, chemical and microbiological parameters of quality, composition nutritional, presence of additives, contaminants
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 anwer the questions posed by the students about the contents of the course, in face-to-face or online tutorials, or by e-mail.
Laboratory practical	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.
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.

Assessment

	Description	Qualification	Training and Learning Results			
Lecturing	The resolution of problems and practical cases, as well as the autonomous work of the student.	20	A2 A3 A4	B1 B2	C11 C12	D1 D2 D3 D5
Laboratory practical	The performance and results of the internships and the completion of the internship report or questionnaire will be evaluated.	20	A2 A3 A4	B1 B2 B3	C11 C12	D1 D2 D3 D5
Objective questions exam	The theoretical knowledge acquired in this course will be evaluated through a test with multiple choice questions.	40	A2 A3 A4	B1 B2	C11 C12	D1 D2 D3 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	A2 A3 A4	B1 B2 B3	C11 C12	D1 D2 D3 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

A. O. A. C., **Official Methods of Analysis (l4th edn). Association of Official Analytical Chemis**, Ariington, 1984

FAO/DANIDA,, **El pescado fresco: su calidad y cambios de calidad**, 1988

FARBER J., DODOS K., **Principles of modified-atmosphere and sous vide product packaging.**, A technopnic Publishing Company Inc,, 1995

HEBARD, D. E., Flick G. J. , Martin R. E., **Occurrence and significance of trimethylamine oxide and its derivates in fish and shellfish. Chemistry and biochemistry of marine food products**, Avi Publishing Co. Conneticut, 1992

GOULD,, **New methods of preservation P., Blackie Academic and Professiona**, 1996

Jae W. Park, **Surimi and surimi sea food**, 2nd edition, 2005

Complementary Bibliography

BEATTY S. A.; N. E. GIBBONS,, **The measurement of spoilage of fish**, 1937

CASTELL, C. H.; B. SMITH Y N. NEAL., **Production of dimethylamine in muscle of several species of gadoid fish during frozen storage, especially in relation to presence of dark muscle**, 1971

CASTELL, C. H.; SMITH B. Y DYER, W. J, **Simultaneous measurements of trimethylamine and diniethyiarnine in fish, and their use for estimating quality of frozen storage gadoid fish**, 1974

Recommendations

Other comments

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