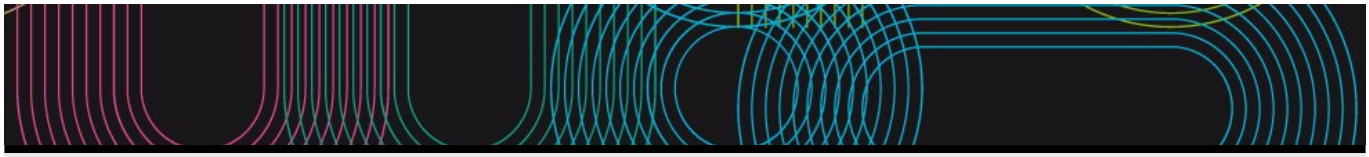

IDENTIFYING DATA				
Research and Innovation in Packaged Foods				
Subject	Research and Innovation in Packaged Foods			
Code	O01M142V01226			
Study programme	Máster Universitario en Ciencia y Tecnología Agroalimentaria y Ambiental			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Optional	1st	2nd
Teaching language	Spanish			
Department				
Coordinator	Franco Matilla, María Inmaculada			
Lecturers	Franco Matilla, María Inmaculada Tovar Rodríguez, Clara Asunción			
E-mail	inmatec@uvigo.es			
Web				
General description				

Training and Learning Results	
Code	
A1	
A4	
B1	(*)Que os estudantes sexan capaces de desenvolver habilidades de análise, síntese e xestión da información para contribuir á organización e planificación de actividades de investigación no eido agroalimentario e do medio ambiente.
B2	(*)Que os estudantes sexan capaces de adquirir e aplicar habilidades e destrezas de traballo en equipo, sexan ou non de carácter multidisciplinar, en contextos tanto nacionais como internacionais, recoñecendo a diversidade de puntos de vista, así como o poso das distintas escolas ou formas de facer.
B5	Que os estudantes sexan capaces de desenvolver iniciativas e espírito emprendedor con especial preocupación pola calidade de vida.
B6	Que os estudantes sexan capaces de entende-la proxección social da ciencia.
C2	
C4	
C5	
C9	
C10	
D1	
D2	
D3	
D4	
D5	
D6	
D7	
D8	
D9	
D10	
D11	Motivación poa calidade con sensibilidade hacia temas medioambientais

Expected results from this subject

Expected results from this subject	Training and Learning Results
Know apply a technology of packaging adapted for each food and to investigate the parameters that determine the quality during the storage. Deepen in the knowledge of the main chemical changes and physicists that produce during the storage of the foods with the end to schedule and carry out a project of investigation that allow to identify possible problems and look for practical and creative solutions.	A1 A4 B1 B2 B5 B6 C2 C4 C5 C9 C10 D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11

Contents	
Topic	
Block I.- Introduction to the packaging of the foods. New developments in materials and technologies of packaging.	1.- Packaging to the empty and in atmospheres modified. 2.- Active and intelligent packaging.
Block II.- Effect of the packaging in the biochemical properties of the foods.	1. Investigation of the biochemical changes during the packaging.
Block III.- Influence of the packaging in the rheological properties and of texture of the foods. Oscillatory test, of load and recovery and thermomecanical analysis	1.- Oscillatory test, of load and recovery and thermomecanical analysis.

Planning			
	Class hours	Hours outside the classroom	Total hours
Lecturing	16	0	16
Mentored work	0	59	59
Presentation	1	0	1
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
	Description
Lecturing	Presentation by part of the professor with help of audiovisual means of the most important contents of the temario of the subject, theoretical bases and/or guidelines of the work, exercise or project to develop by the student (face-to-face). The presentations will be to disposal in the platform of teledocencia of the University of Vigo (https://moovi.uvigo.gal/)
Mentored work	The student, of individual way, elaborates a document of investigation on an appearance or concrete subject of the matter, by what will suppose the research and collected of information, reading and handle of bibliography, editorial, exhibition... (No face-to-face).

Personalized assistance	
Methodologies	**Description**
Mentored work	It will make a continuous follow-up of the students and will carry out a personalised attention, through the classes and of the control of the work elaborated. Also they will be able to assist, if like this they wish it, to the tutorials in group or personalised. The tutorials made in person or by videoconference through the virtual dispatch (previous request) that finds in the Virtual Campus.
Lecturing	It will make a continuous follow-up of the students and will carry out a personalised attention, through the classes, of the resolution of exercises and of the control of the work elaborated. Also they will be able to assist, if like this they wish it, to the tutorials in group or personalised. The tutorials made in person or by videoconference through the virtual dispatch (previous request) that finds in the Virtual Campus.

Assessment						
	Description	Qualification	Training and Learning Results			
Lecturing	At the end of each Block will hang a questionnaire in the platform https://moovi.uvigo.gal/ That will remain to disposal of the students during a week so that these complete it in a maximum time of 2 hours, having of 3 attempts (no face-to-face).	40	A1 A4	B1 B2	C5 C9 C10	D2 D4 D7
Mentored work	Design of a work of investigation: delivery (no face-to-face) and exhibition of the same (face-to-face or mixed)	40	A1 A4	B1 B2 B5 B6	C2 C4 C5 C9 C10	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11
Presentation	Presentation of the work (face-to-face)	20	A1 A4	B1 B2 B5 B6	C2 C4 C5 C9 C10	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11

Other comments on the Evaluation

Valorarase negativamente na elaboración de traballos e/ou resolución de problemas a réplica ou copia literal de documentos.

Sistema de cualificacións: expresarase mediante cualificación final numérica de 0 a 10 segundo a lexislación vixente (Real Decreto 1125/2003 de 5 de setembro; BOE 18 de setembro).

The preferred method of assessment is Continuous Assessment. Students who wish to take the Global Assessment (100% of the grade in the official exam) must inform the person in charge of the subject, by email or through the Moovi platform, within a period not exceeding one month from the beginning of the teaching of the subject. In the continuous assessment, attendance and continuous student participation will be assessed.

Sources of information

Basic Bibliography

Complementary Bibliography

Dong Sun Lee, Kit L. Yam y Luciano Piergiovanni, **Food Packaging Science and Technology**, CRC Press, 2008

Coles, R., McDowell, D., M.J. Kirwan, **Manual del envasado de alimentos y bebidas**, Vicente-Mundi-Prensa, 2004

Mezger, T.G., **The Rheology Handbook**, Vincentz Network, 2013

Steffe, J.F., **Rheological methods in food process engineering. 2ª edición.**, Freeman Press, 1996

Brody A. L., **Envasado de alimentos en atmósferas controladas, modificadas y a vacío**, Acribia, 1996

Miquel Angelo Parente Ribeiro Cerqueira, Ricardo Nuno Correia Pereira, Oscar Leandro da Silva Ramos,, **Edible Food Packaging: Materials and Processing Technologies**, CRC Press, 2016

Recommendations

Subjects that are recommended to be taken simultaneously

Design of New Food Products/O01M142V01225
Preparation, Transformation and Diversification in the Food Industry/O01M142V01122