



IDENTIFYING DATA

Food toxicology

Subject	Food toxicology			
Code	O01G041V01505			
Study programme	Grado en Ciencia y Tecnología de los Alimentos			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	3rd	1st
Teaching language	Spanish Galician			
Department				
Coordinator	González Barreiro, Carmen			
Lecturers	González Barreiro, Carmen Rial Otero, Raquel			
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Web				
General description				

Training and Learning Results

Code	
A2	Students will be able to apply their knowledge and skills in their professional practice or vocation and they will show they have the required expertise through the construction and discussion of arguments and the resolution of problems within the relevant area of study.
A3	Students will be able to gather and interpret relevant data (normally within their field of study) that will allow them to have a reflection-based considered opinion on important issues of social, scientific and ethical nature.
B1	Students will acquire analysis, synthesis and information-management skills to contribute to planning and conducting research activities in the food field.
B3	Students will develop personal skills to engage in critical thinking.
C5	To be familiar with the basic operations in the food industry.
C6	To be familiar with the industrial processes linked with the processing and transformation of food.
C7	To be familiar with the basic concepts linked to hygiene through the whole process of production, transformation, preservation and distribution of food. This involves the acquisition of the relevant knowledge about food microbiology, parasitology and toxicology, as well as contents linked to personal hygiene, products and processes.
C8	To be familiar with the systems of food quality, along with all the aspects linked to food regulation and legislation.
C17	Ability to analyze and assess food risks.
C18	Ability to manage food safety.
C19	Ability to assess, control and manage food quality.
D5	Problem-resolution and decision-making skills.
D11	Striving for quality with focus on awareness about environmental issues.

Expected results from this subject

Expected results from this subject	Training and Learning Results			
R1.-Knowledge of the sources of exhibition, pathophysiology, mechanisms of action, symptomatology, diagnostic, treatment and prevention of the intoxications by natural and artificial substances presents in the foods.	A3	B1	C7 C17	
R2.-Knowledge of the synthesis of toxic substances during the technological processes of the foods.	A2	B1	C6 C7 C8 C17 C18 C19	D5
R3.-Prevention of the alimentary intoxications by means of the establishment of the limits of security of the toxic, to guarantee to the population safe foods.	A2	B1	C8	D5 D11

R4.-Knowledge of the real risk of emergent toxic compounds in alimentary security.	A3	B3	C17 C18 C19	D5
R5.-Know and implement the techniques and methods of toxicological evaluation in alimentary security.	A3		C5 C17 C18	D5
R6.-Know and handle the sources of basic information related with toxicology and alimentary security.	A3		C5 C8 C18	D5
R7.-Capacity of fast adaptation to new situations in the field of the alimentary security, as well as to take decisions and solve problems	A3		C8 C17 C18	D5

Contents

Topic

BLOCK 1: Basic Principles of General Toxicology.	Introduction to the toxicology.
	Basic concepts in toxicology.
BLOCK 2: Toxicological factors that affect food security.	.
BLOCK 3: Characterisation of the toxic risk	Identification of dangers, study of the exhibition to toxic compounds through the diet and toxicological evaluation of said xenobiotics. Limits of security.
BLOCK 6: Toxic Substances present in foods.	Natural and synthetic compounds, pollutants, toxic agents derived from technological treatments of the foods and emergent toxic compounds. Sources of exposure, toxicokinetics, pathophysiology and mechanisms of action. Symptomatology, diagnostic, treatment and prevention of these intoxications.

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	28	28	56
Seminars	14	14	28
Laboratory practical	14	0	14
Report of practices, practicum and external practices(Repetida non usar)	0	16	16
Objective questions exam	0	36	36

*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 part of the professor with help of IT of the most important features of the subject contents, theoretical bases and/or guidelines of the work, exercise or project to develop by the student, with marked participatory character by part of the students.
Seminars	Enlargement and/or deepening in the contents of the matter. Resolution of problems and/or exercises. Study of cases of intoxications. Debate and discussion of current questions related with the matter The professor will formulate problems and/or exercises related to the matter. They will be made in the classroom (face-to-face) or by means of the virtual platform (no face-to-face). The professor will supervise the autonomous work of cases/analysis of situations with bibliographic support, with the purpose to know it, interpreting it, resolving it, generating a hypothesis, diagnosing it and deeping in alternative procedures of solution, to see the application of the theoretical concepts in the reality.

Laboratory practical	(*)O programa de clases prácticas está orientado a familiarizar ao alumno co manexo das bases de datos toxicolóxicas, os métodos de avaliación do risco toxicolóxico e a determinación de substancias nocivas nos alimentos. As prácticas seleccionaranse de modo que o seu desenvolvemento sexa coherente co resto de actividades da materia (clases de teoría e seminarios). Trátase pois de que todas estas actividades contribúan significativamente á formación do alumno. Estas clases levaranse a cabo no laboratorio de Toxicoloxía e realizáranse en grupos reducidos. A finalidade desta actividade é fomentar o traballo en grupo, fomentar que o alumno aplique os coñecementos adquiridos nas clases teóricas, estimular a capacidade de auto-aprendizaxe e completar de forma sólida os coñecementos adquiridos.
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Personalized assistance

Methodologies	Description
Lecturing	Will take into account the training purchased by each student in the studies in previous courses. The attention of the student will make of face-to-face form during the hours assigned and during the tutoring hours.
Seminars	The attention of the student will make of face-to-face form during the hours assigned, during the tutoring hours, and no face-to-face through the platform or email.
Laboratory practical	

Assessment

	Description	Qualification	Training and Learning Results			
			A3	B3	C5	D5
Seminars	Assistance, participation and resolution of exercises. Realization of works/project and oral exhibition.	25	A3	B3	C5 C8 C17 C18 C19	D5
Laboratory practical	(*)As prácticas de laboratorio avaliaranse tendo en conta a participación e actitude do alumno durante o desenvolvemento das prácticas e mediante un exame que se realizará á finalización das mesmas. Para superar a materia é obrigatorio a asistencia polo menos dun 80 % das horas prácticas e aprobar devandito exame. Resultados previstos na materia: RA4, RA5, RA6, RA7.	20	A3	B3	C5 C8 C17 C18 C19	D5
Report of practices, practicum and external practices (Repetida non usar)	(*)As prácticas de laboratorio avaliaranse tamén mediante a elaboración dunha memoria de prácticas que se presentará ao finalizar as mesmas. Resultados previstos na materia: RA4, RA5, RA6, RA7.	15	A3	B3	C5 C8 C17 C18 C19	D5
Objective questions exam	Short and long questions envelope the contents of the subject	40	A2 A3	B1 B3	C6 C7 C8 C17 C18 C19	D5 D11

Other comments on the Evaluation

End of career call.

The student who chooses to examine at the end of the degree will be specifically evaluated with the exam (which will be worth 100% of the grade). In case of not attending this exam, or not passing it, it will be evaluated in the same way as the rest of the students.

To pass this subject, the student must obtain a score equal to or greater than 5 out of 10 in the written tests. Otherwise, this note will not compensate with the qualifications obtained in the remaining methodologies.

Regarding the evaluation system for those students who cannot attend a class, they will deliver the memory of a work (30% of the final grade) and will take the written test (70%, solving exercises and short and long answers), in which will require obtaining a grade equal to or greater than 5 out of 10. Otherwise, this grade will not compensate with the grade obtained on the job.

Scheduled exam dates:

End of Degree: 23.09.2021 at 4:00 p.m.

First Call (Bimester): 05.11.2021 at 10:00 a.m.

Second Call (July): 08.07.2022 at 10:00 a.m.

Sources of information

Basic Bibliography

Manuel Repetto Jiménez, Ana María Cameán Fernández, **Toxicología alimentaria**, Ediciones Díaz de Santos, 2006

Manuel Repetto Jiménez, Guillermo Repetto Kuhn, **Toxicología fundamental**, Ediciones Díaz de Santos, 2009

A. López de Cerain Salsamendi, A. Azqueta Oscoz, A. Gloria Gil Royo, A.Vettorazzi Armental, **Toxicología**, Ecoe Ediciones, 2022

Complementary Bibliography

Karen E. Stine, Thomas M. Brown, **Principles of Toxicology**, 3ª, CRC Press, 2015

A. Wallace Hayes, Claire L. Kruger, **Hayes' Principles and Methods of Toxicology**, 6ª, CRC Press, 2014

Gupta, P. K., **Fundamentals of toxicology: essential concepts and applications**, 1ª, Academic Press, 2016

Tõnu Püssa, **Principles of Food Toxicology**, Taylor & Francis, 2013

Anand Swaroop, Debasis Bagchi, **Food Toxicology**, CRC Press, 2016

Recommendations

Subjects that continue the syllabus

Food safety/O01G041V01901

Subjects that are recommended to be taken simultaneously

Bromatology/O01G041V01501

Subjects that it is recommended to have taken before

Physiology/O01G041V01205

Food hygiene/O01G041V01604