COURSE DATA

DATA SUBJECT

Code: 33947
Name: New Foodstuffs
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1205 - Degree in Human Nutrition and Dietetics	Facultat de Farmàcia i Ciències de l'alimentació	4	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1205 - Degree in Human Nutrition and Dietetics	Novel foods	ELECTIVES

COORDINATION

GAMERO LLUNA MARIA DESAMPARADOS

SUMMARY

Novel Foods is an elective subject in the fourth year of Degree in Food Nutrition and Dietetics, which is taught in the Faculty of Pharmacy and Food Sciences, University of Valencia. This subject has a total of 6 ECTS credits.

Regulation EC 258/97 of the European Comission and the Council of 27th January 1997 concerning novel foods and food ingredients provide the detailed rules for the licensing, marketing and labeling of novel foods and novel food ingredients. This regulation defines novel foods and novel food ingredients which are those that have not been on the EU market to a significant degree before the entry into force of the Regulation in May 1997. Will be classified as novel foods genetically-modified (GM) foods, exotic foods and foods of new formulation or processing technology, many of which are enclosed in so-called functional foods. Functional food is defined as one that, as part of a balanced diet, has a health benefit beyond their nutritional value. The current European normative requires a robust and rigorous scientific demonstration of the healthful properties that are declared in a food. This fact has promoted in recent years the research of the multiple beneficial effects of food ingredients and the development of areas such as nutrigenomics, which seeks to establish the relationship between diet and genome.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

To have completed the subjects Biology, Biochemistry, Microbiology and Chemistry

COMPETENCES / LEARNING OUTCOMES

1205 - Degree in Human Nutrition and Dietetics

Know, judge and know how to use and apply the sources of information related to nutrition, food, lifestyles and health.

Know about new trends in food technology for the preparation of bioactive components and marketing of novel foods and nutraceuticals.

Know the key bioactive components in foods and nutraceuticals.

Know the legislation regarding nutrition and health claims.

DESCRIPTION OF CONTENTS

1. Introduction

Topic 1. Novel Foods. Definition. European regulation. Categories of novel foods.

Topic 2. Functional foods. History and definitions. Nutritional and health claims. Regulation.

Topic 3. Genetically modified foods. Definition. GM foods today. The social debate.

2. Probiotics and prebiotics

Topic 4. The human gut microbiota. Bases of the human gut physiology. Physiological functions. Ecology of the gastrointestinal tract. Microbial metabolism in the gastrointestinal system.

Topic 5. Probiotics. Definitions. Requirements and evaluation criteria. Functions and mechanisms of action. Selection and production methods.

Topic 6. Beneficial effects of probiotics. Gastrointestinal disorders. Intestinal inflammatory diseases and syndromes. Cancer. Allergy. Urogenital tract disorders.

Topic 7. Prebiotics and synbiotics. Definition, types and properties. Selection and evaluation methods. Physiological and local effects. Modulation of the gastrointestinal microbiota. Immune system. Metabolism and absorption. Probiotics in infancy. Gastrointestinal effects. Probiotics in old age. Cancer. Other beneficial effects.

3. Functional ingredients

Topic 8. Carbohydrates and dietary fiber. Carbohydrates as functional ingredients. Definition and types of dietary fiber. Physiological functions of dietary fiber. Functional foods with fiber.

Topic 9. Proteins and peptides. Biological effects of functional peptides. Origin and methods for obtaining peptides with biological activity. Functional foods with active peptides.

Topic 10. Fatty acids. Physiological functions and the origin of short-chain fatty acids, phospholipids, polyunsaturated fatty acids and conjugated fatty acids. Functional foods with fatty acids.

Topic 11. Antioxidants. Oxidative stress. Modes of action. Toxicological aspects. Antioxidant compounds. Functional foods with antioxidants.

Topic 12. Nutraceuticals. Definitions. Plant extracts. Examples of nutraceuticals. Regulations.

4. Nutrigenomics

Topic 13. Nutrigenetics and nutrigenomics. Definitions. Past, present and future. Gene-diet interactions. Methodology. Nutrigenomics in sickness and health.

Topic 14. Nutrigenomics and prevention. Public Health. Cancer. Cardiovascular disease. Obesity.

5. Social aspects

Topic 15. Regulations and society. Regulation on functional foods outside the European Union. Draft Regulation of the European Union. Economic impact on the business sector. Dissemination tools and social impacts.

6. Laboratory work

1. Probiotic bacteria in fermented milk.
2. Production of fermented milk.
3. Evaluation of the antioxidant capacity of food and commercial extracts.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	2,00
Theory	38,00
Seminar	2,00
Laboratory	15,00
Total hours	**57,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	10,00
Independent study and work	15,00
Preparation of lessons	25,00
Preparation for assessment activities	30,00
Resolution of case studies	10,00
Total hours	**90,00**

TEACHING METHODOLOGY

Theory: the course will primarily consist of lectures on the subject matter, supported by audiovisual materials provided to students. Optional activities and short assignments will also be given and will be considered in the final grade. Finally, during the last sessions, a **group project** will be undertaken to apply the knowledge acquired during the lectures. This project will be presented in class by the students and will contribute to the theory grade.

Tutorials: these will consist of review and reinforcement activities for the course content, as well as answering questions.

Seminars: various complementary activities related to the course content may be carried out, such as debates, critical analysis of readings or scientific articles, resolution of practical or clinical cases, and the creation of informational materials (e.g., infographics). These seminars will foster skills in information research and synthesis, ICT proficiency, and the ethical and responsible use of AI, as well as oral and written communication, while also encouraging teamwork, reflection, and constructive criticism.

Practical Sessions: practical laboratory sessions will be held. A booklet with procedures and a series of questions for students to answer will be provided in advance.

Throughout all sessions, both theoretical and practical, examples of the application of the course content in relation to the Sustainable Development Goals (SDGs) will be shown. The aim is to provide students with the knowledge, skills, and motivation to understand and address these SDGs.

EVALUATION

Assessable Activities:

a) **Theory** (60%): a written exam to assess knowledge and understanding of the theoretical content established for the subject. This exam will account for 40% of the overall grade, and a minimum score of 5 out of 10 is required to pass the course. The completion and presentation of the **group project** will account for 20% of the overall grade.

b) **Tutorials** (10%): evaluation of the work carried out during classroom tutorials and the ability to complete the activities proposed in class throughout the course.

c) **Seminars** (10%): the work performed will be evaluated based on its scientific content, the ability to present it publicly and discuss it with the professor and peers, as well as the individual's integration into the working group.

d) **Practical Work** (20%): evaluation of laboratory work through a written exam that will reflect the ability to solve the experimental problems presented. A minimum score of 4 out of 10 is required to pass the course. Additionally, the grade obtained will be multiplied by a coefficient between 0.5 and 1 to be considered by the teaching staff based on the attitude, participation in the laboratory and punctuality shown by the student.

To pass the subject, you must obtain 5 or more points out of 10 in the final grade considering all assessable activities.

To obtain "with honors" mention, it is a preferred criterion to pass the subject in the first call.

The activities of laboratory, tutorials and seminars, are of MANDATORY ATTENDANCE and, therefore, NOT RECOVERABLE, in accordance with the provisions of Article 6.5 of the Regulation of Evaluation and Qualification of the UV for Bachelor and Master´s degrees. If it is not possible to attend any of these activities for justified reasons, it must be communicated in advance. In this way, the professor in charge of the subject will determine the actions to be carried out.

Attendance at practices, tutorials and seminars is mandatory to pass the subject. Attendance is NOT mandatory for repeating students who have completed these activities in the two courses after their completion, during which the grades will be kept (NOTE: as the seminars changed from coordinated to non-coordinated status in the 2026/2027 academic year, grades and attendance records from seminars prior to 2026/27 will not be retained; however, they will be retained for subsequent academic years). Non-attendance without justified cause in the tutorials or in the coordinated seminars will imply a zero in the corresponding evaluation section, on the other hand, the non-presentation of the coordinated seminar will imply the failure of the subject, except for the repeating students who have attended and presented in previous courses.

Evidence of copying or plagiarism in any of the assessable tasks will result in failure to pass the subject and in appropriate disciplinary action being taken. Please note that, in accordance with article 13. d) of the Statute of the University Student (RD 1791/2010, of 30 December), it is the duty of students to refrain from using or participating in dishonest means in assessment tests, assignments or university official documents. In the event of fraudulent practices, the "Action Protocol for fraudulent practices at the

University of Valencia" will be applied (ACGUV 123/2020): https://www.uv.es/sgeneral/Protocols/C83sp.pdf

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