29233 - Functional Foods

Información del Plan Docente

Academic Year	2016/17
Academic center	229 - Facultad de Ciencias de la Salud y del Deporte
Degree	441 - Degree in Human Nutrition and Dietetics
ECTS	6.0
Course	4
Period	Half-yearly
Subject Type	Optional
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

5.2.Learning activities

LEARNING ACTIVITIES PLANNING

The program that the student is offered to help them to achieve the expected results including the following activities:

1. Regarding to the theoretical content of the subject. Total duration: 45 hours.

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Sessions dedicated to expose and explain the basic and necessary content for the understanding of the subject.

a) Introduction and Overview. Basic concepts, objectives and target functions of the functional components. Organic foods. Duration: Approximately 8 hours.

b) Functional foods: Health claims, production strategies, regulation, labeling and advertising. Duration: 6 hours.

c) Physiological effects of major functional foods and potential of these functional ingredients. Duration: 20 hours.

d) Clinical Applications of the main phytochemicals potential food and nutraceutical functional ingredients. Enriched and fortified foods. Gene-diet interactions. Duration: 16 hours.

2. Regarding to the practical development of the subject. Total duration: 15 hours.

a) Resolution of cases studies and problems (5 hours). Students must solve several problems and issues using audio-visual material and teacher. Group work is encouraged. Some of these activities may be complemented by the autonomous student work and promoting personal study.

b) Practical work (10 hours). Seminars dedicated to discuss and analyze scientific articles and audiovisual projections related to the program content. Making and oral presentation of group work on a scientific topic proposed.

3. Regarding to self-employment and personal study (85 hours Non-contact). Study of related lectures, seminars and examinations preparation, data collection and analysis, information retrieval and further reading content.

4. Regarding to the assessment tests (5 hours attendance). Different tests to verify and check the acquisition of both theoretical and practical knowledge and skills acquisition will be made.

5.3.Program

Regarding to the theoretical content of the subject.

Introduction and Overview. Basic concepts, objectives and target functions of the functional components. Organic foods.

- General introduction. Concepts and definitions: Healthy eating, functional food, food design, pharma-food, nutraceutical, phytochemicals.

- New foods and functional foods. Objectives of the functional foods' science. Target functions of nutrients and food components with functional properties.

- Organic foods (organic) "versus" transgenic or genetically modified foods.

Functional foods: Health claims, production strategies, regulation, labeling and advertising.

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- Health claims on functional products. History, background, and current market demand for new foods.

- Procedures for obtaining functional foods. Production and development' strategies of functional foods.

- Regulation and national and international regulations on functional foods and nutraceuticals.

- Criteria for use of health claims. Labelling's adjustment to the new regulation.

Physiological effects of major functional foods and potential of these functional ingredients.

- Potential functional ingredients. Classification. Effectiveness and validity of "biomarkers" and "functional" value added food. Functional ingredients derived from traditional foods.

- Beneficial compounds from fruits, vegetables and legumes. Amaranth, quinoa, soy. Chemopreventive main inducers: cruciferous and allium.

- Ingredients and biological effects of exotic foods of America: Tropical fruit.

- Bioactive compounds and physiological effects of nuts.

- Bioactive compounds in meat, milk and dairy products.

- Bioactive compounds in beer and wine.

- Biological importance of fats in the human diet (I). General biological functions of fatty acids. Metabolism and biological functions of essential fatty acids.

- Beneficial properties and physiological effects of olive oil.

- Functional fermented dairy products: probiotics, prebiotics and symbiotics.

Clinical Applications of the main phytochemicals potential food and nutraceutical functional ingredients. Enriched and fortified foods. Gene-diet interactions.

- Nutritional supplements. Fortified foods and fortified foods.

- Biological importance of fats in food (II). Functional impairment of biological processes in the body.

- Clinical Applications of foods enriched in omega-3.

- Clinical Applications of foods enriched in phytosterols.

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- Clinical Applications of foods enriched in isoflavones and phytoestrogens.

- Relation between consumption of fruits and vegetables and health.

- Free radicals and antioxidant nutrients. The antioxidant role of plant foods.

- Vitamins and polyphenols.

- Physiological effects and clinical applications of dietary fiber.

- Scientific evidence of functional ingredients and nutraceuticals in the treatment of obesity, cardiovascular disease, diabetes, hypertension, cancer and other diseases.

- Gene-diet interactions. Nutrigenetics and nutrigenomics: Personalized nutrition.

Regarding to the practical development of the subject.

Resolution of cases studies and problems . Students must solve several problems and issues using audio-visual material and teacher. Group work is encouraged. Some of these activities may be complemented by the autonomous student work and promoting personal study.

Practical work . Seminars dedicated to discuss and analyze scientific articles and audiovisual projections related to the program content. Making and oral presentation of group work on a scientific topic proposed.

5.4.Planning and scheduling

5.5.Bibliography and recomended resources