

29210 - Food: Biochemistry and Technology

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	9.0
Course	2
Period	Annual
Subject Type	Compulsory
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

The learning process designed for this course will consist of:

Attendance to classroom activities (lectures, seminars, problems resolution and case studies using participatory approaches), laboratory sessions, technical visits and attendance to food fairs. Students will also prepare a short written essay about a foodstuff.

All activities involve a load of autonomous learning for the achievement of the learning outcomes.

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5.2.Learning activities

The following activities are included:

- Lectures: 60 hours
- Laboratory practical sessions: 15 hours
- Seminars and problem-based sessions: 5 hours
- Technical visits: 10 hours

Project work (individual or group work): 15 hours

Assessment: 3 hours

Autonomous student learning

5.3.Program

The program will give students foundation knowledge of food chemistry and food processing and will consist of:

Module 1. Introduction

Contents: Presentation. Introduction to Food Science and Technology. Properties of food. Food quality.

Module 2. Food Chemistry

Contents: Water. Carbohydrates. Proteins. Lipids. Enzymes. Pigments. Vitamins. Minerals. Flavour. Integration.

Module 3. Food preservation and processing

Contents: Basic principles. Heat processing. Chilling preservation and freezing. Preservation by controlling water. pH in food preservation. Fermentation technology. Chemical preservation. Packaging. Controlled and modified atmosphere storage and packaging. Emerging technologies. Hurdle technology and combined methods.

Module 4. Food process technology

Contents: Milk and dairy products. Meat and meat products. Fish and fishery products. Egg and egg products. Fruit and vegetable science and technology. Technology of oils and fats. Cereal and cereal products.

5.4.Planning and scheduling

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The planning will be delivered through the UZ ADD/Moodle system

5.5. Bibliography and recommended resources

- Belitz, Hans-Dieter.. Lehrbuch der Lebensmittelchemie. [Inglés. : Food chemistry / H.-D. Belitz, W. Grosch, P. Schieberle. 3rd revised ed. / translation from the fifth German edition by M.M. Burghagen. Berlin [etc.]: Springer, cop. 2004.
- Casp Vanaclocha, Ana. Procesos de conservación de alimentos / Ana Casp Vanaclocha, José Abril Requena . 2ª ed. corr. Madrid : A. Madrid Vicente : Mundi-Prensa, 2003
- Cheftel, Jean-Claude. Introducción a la bioquímica y tecnología de los alimentos. Vol. I / Jean-Claude Cheftel, Henri Cheftel / traducido del francés por Francisco López Capont . - [1ª ed., 4ª reimp.] Zaragoza : Acribia, 2000
- Cheftel, Jean-Claude. Introducción a la bioquímica y tecnología de los alimentos. Vol.II / Jean-Claude Cheftel, Henri Cheftel, Pierre Besançon ; prólogo de Pierre Desnuelle ; traducido del francés por Francisco López Capont . - [1ª ed., 4ª reimp.] Zaragoza : Acribia, 2000
- Coultate, Tom P.. Manual de química y bioquímica de los alimentos / T.P. Coultate ; [traducción de : José Fernández-Salguero Carretero] . - 3ª ed. Zaragoza : Acribia, D.L. 2007
- Fellows, Peter.. Tecnología del procesado de los alimentos : principios y prácticas / Peter Fellows ; traducción de Jesús Ceamanos Lavilla . - 2ª ed. Zaragoza : Acribia, D.L. 2007
- Química de los alimentos / editado por Srinivansan Damodaran, Kirk L. Parkin, Owen R. Fennema ; [traducción a cargo de : Pascual López Buesa, Rosa Oria Almudí ... (et al.)]. - 3ª ed. en español, traducción de la 4ª ed. inglesa Zaragoza : Acribia, D.L. 2010
- Ciencia de los alimentos : bioquímica, microbiología, procesos, productos. Volumen 1, Estabilización biológica y fisicoquímica / coordinadores, Romain Jeantet ... [et al.] Zaragoza : Acribia, 2010
- Ciencia de los alimentos : bioquímica, microbiología, procesos, productos. Volumen 2, Tecnología de los productos alimentarios / coordinadores, Romain Jeantet ... [et al.] Zaragoza : Acribia, 2010
- Tecnología de los alimentos. Vol.I, Componentes de los alimentos y procesos / Juan A. Ordóñez Pereda (editor) Madrid : Síntesis, D.L. 1998
- Tecnología de los alimentos. Vol.II, Alimentos de origen animal / Juan A. Ordóñez Pereda (editor) Madrid : Síntesis, D.L. 1998
- Potter, Norman N. : Ciencia de los alimentos / Norman N. Potter, Joseph H. Hotchkiss . - reimp. Zaragoza : Acribia, 2015
- Manual de conservación de los alimentos / Editor M. Shafiur Rahman Zaragoza : Acribia, imp. 2003