



Centre adscrit



UNIVERSITAT DE
BARCELONA

COURSE CONTENT

Academic year 2020/2021

Code-Course	053217 - Culinary Experimentation		
Thematic Area	Cooking and science	Year	Third
Course Type	Mandatory	Credits	6 cr. ECTS
In-class Hours	60 hours	Hours of Individual Work	90 hours

BRIEF COURSE DESCRIPTION

The close relation between science and cooking has become a foundation of the culinary revolution. Understanding and explaining the culinary processes from scientific disciplines such as chemistry or physics – together with the joint work done by scientists and cooking experts – have allowed the creation of new preparations, new cooking methods, new forms of presentation and the use of new products.

In this course, students will learn the fundamentals of the scientific disciplines related to the culinary processes by means of experiments with food productions that highlight the particularities of chemistry, physics, biology or other disciplines.

SPECIFIC SKILLS

SS14 – Understand the chemical structures, properties and transformations of the components of foods.

SS15 – Apply the techniques, methods and tools used for chemical, biochemical, physical and sensorial analysis.

SS16 – Inform and give scientific and technical advice to the food industry and to consumers in order to design intervention strategies and training in culinary science.

LEARNING OBJECTIVES

- Apply scientific knowledge in culinary process optimization applications.
- Experiencing new scientific-gastronomic processes that enable the generation of information that will generate wealth.
- Know the physical and physicochemical properties of products and processes.
- Apply the principle of thermodynamics to the study of balance systems.
- Apply knowledge about solutions, suspensions, emulsions, colloids in culinary processes.
- Identify the different transformations and modifications that occur in food.

THEMATIC CONTENTS



1. Foods processing.
2. Textures applied to cooking.
3. Technology. Cooking appliances and utensils.

LEARNING METHODOLOGY

This course combines lectures with laboratory practices equally. Students will also have to do two assignments in order to go deeper into contents.

ASSESSMENT SYSTEM

The assessment system assesses the student's achievement of learning outcomes regarding the subject's own competences.

Students may choose between continuous assessments throughout the year or a final examination at the end of the course.

Continuous assessment: the teaching-learning process is assessed by a continuous monitoring of the work done by the students throughout the course.

Final examination: it assesses the students' learning outcomes by means of a final exam at the end of the course. Students who cannot come to class regularly due to justified reasons will be assessed at the end of the course.

Assessment systems	Continuous	Final
Students assignments	50 %	45%
Practices	40 %	-
Final written exam	60 %	55 %

REVIEW AND REASSESSMENT OF THE COURSE

The student has the right to review all the evidences that have been designed for the assessment of learning.

If a student fails to achieve the learning objectives of the course, in order to opt for the reassessment of the course and submit a new reassessment task, it will be mandatory to fulfil one of these conditions:

- A. Students must have been awarded a mean grade of 5.0 or higher in relation to the activities carried out throughout the semester without taking into account the final exam/s (both continuous assessment and single assessment) and having attended the final exam.
- B. Students must have been awarded a final minimum grade of 4.0 in the overall course.

After the reassessment, the maximum grade is 5.0 in the overall course.



Centre adscrit



UNIVERSITAT DE
BARCELONA

COURSE CONTENT

Academic year 2020/2021

BIBLIOGRAPHY

- Harold McGee. La Cocina y los Alimentos. Enciclopedia de la Ciencia y la Cultura de la Comida. Debate. 3ª Edición. Barcelona, 2008.
- Harold McGee. The Curious cook : more kitchen science and lore. Toronto : Maxwell Macmillan Canada ; New York [etc.] : Maxwell Macmillan International, cop. 1990.
- Peter Barham. La Cocina y la Ciencia. Acribia S.A. Zaragoza, 2002.
- Hervé This. Tratado Elemental de Cocina. Acribia. Zaragoza, 2005.
- Hervé This. La cocina y sus misterios : explicación científica de las 55 mejores recetas de la cocina francesa. Acribia, DL. Zaragoza, 1998.
- Hervé This. Los secretos de los pucheros. Acribia, DL. Zaragoza, 1996.
- Claudi Mans. La Truita cremada : 24 lliçons de química. Col·legi Oficial de Químics de Catalunya. Barcelona, 2005.
- J. Amich-Galí. Los elementos científicos de la gastronomía. EOPRO. Barcelona, 2006.
- Ted Lister & Heston Blumenthal. Kitchen chemistry. Royal Society of Chemistry, cop. London, 2005.
- Nathan Myhrvold. Modernist Cuisine. Taschen, cop. Köln, 2011.
- Nathan Myhrvold. Modernist Cuisine at Home. Taschen, cop. Köln, 2011.
- Joan Roca. La cocina al vacío. Montagud, cop. Barcelona, 2004.
- Joan Roca & Salvador Brugués. Cocina Con Joan Roca A Baja Temperatura. Planeta. Barcelona, 2016.
- Heston Blumenthal. In search of perfection: Reinventing Kitchen Classics. Bloomsbury. London, 2006.
- Pere Castells. La cuina del futur : cuina, ciència i salut. Tibidabo. Barcelona, 2016.
- Aparells i utensilis aplicats a la cuina professional / pròleg de Ferran Adrià. Fundació Alícia. Fundació Alícia i Escola d'Hoteleria i Turisme CETT. Barcelona, 2011.