Centre adscrit
UNIVERSITAT DE BARCELONA

COURSE CONTENT

Academic year 2020/2021

Code-Course	051102 - Principles of Physiology and Biochemistry		
Thematic Area	Chemistry	Year	First
Course Type	Mandatory	Credits	6 cr. ECTS
In-class Hours	60 hours	Hours of Individual Work	90 hours

BRIEF COURSE DESCRIPTION

The aim of this course is, on the one hand, to teach students the main immediate principals of foods, and the main plant metabolism products that can provide olfactory, gustatory and technological properties to prepared foods. On the other hand, to provide students with the necessary knowledge to understand how human beings enjoy food, transform foods into nutrients, how these nutrients are absorbed and finally used to produce energy and keep the body structure.

This course consists of several thematic blocks where students will learn the structural and functional characteristics of immediate principals and plant metabolites of interest in cooking. In addition, students will study the fundamentals of biochemistry and metabolism as well as metabolic regulation; cellular, nervous system, sensory and digestive physiology; and food intake control.

BASIC SKILLS

BS1 – Students must demonstrate knowledge and understanding in a study field based on secondary school and that relies on advanced textbooks and includes some aspects that imply knowledge about the vanguard of it.

SPECIFIC SKILLS

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

SS25 – Know the physical, chemical and nutritional properties of raw products and foods.

LEARNING OBJECTIVES

- Differentiate between different types and levels of cellular organization: eukaryotic and prokaryotic cells.

- Know the basis of molecular biology and the importance of this discipline in biotechnological development
- Understand the fundamentals of physic pathological physiological processes.
- Understand the physiological systems and processes most related to food.
- Understand the mechanisms of sensory perception; correctly use the nomenclatures of the sensory analysis of food and culinary processes.
- Acquire the work skills of a chemical, physical and biological laboratory in the field of food.

THEMATIC CONTENTS

1. Fundamentals of biochemistry
2. Plant metabolites of culinary and gastronomic interest
3. Looking at an edible universe. Cellular physiology and nervous system physiology
4. Sensory physiology. Colours and flavours. Neurogastronomy
5. Digestive system. Cooking inside our bodies
6. Fundamentals of metabolism. Energy sources and body storage systems
7. Basics of metabolic regulation.
8. Control of food intake

LEARNING METHODOLOGY

The teaching-learning process is addressed through participation in class, workshops and practical classes, as well as assignments and attendance to different activities throughout the course.

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
Student assignments	15%	15 %
Attendance and participation to the practical classes	10 %	10%
Final practical exam	15%	15%
Final written exam	60%	60%

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.

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