

Course Unit: 935021 - Food chemistry

Year 2 Semester 4 ISCED Code: 721 ECTS: 5.0

Type of Course Unit: Compulsory **Delivery Mode:** Face-to-face **Language of Instruction:** Portuguese

COURSE COORDINATOR: Silvina dois Anjos Pimenta Marques Maia Ferro Palma

HOURS OF WORK

TOTAL HOURS	Contact Hours								Hours in autonomous work
	Theory	Theory and practice	Practical and laboratory work	Field work	Seminar	Internship	Tutorial guidance	Other	
125	30		45						50

Prerequisites (if applicable): Not applicable

LEARNING OUTCOMES (knowledge, skills and competence)

- (1) The student must know the chemistry of foods
- (2) Highlighting the importance of analyzes
- (3) Start the study of food Toxicology

CONTENTS

- 1 - Brief references to the history of food.
- 2 - Nutrients, proteins, lipid, carbohydrates, vitamins and minerals.
- 3 - Functions in the food and energy intakes.
- 4 - The main food components and their technological importance
- 5 - Browning Reactions (Maillard reaction, Strecker degradation, caramelization);
- 6 - Functional Properties of proteins: Hydration; Viscosity; Solubility; Gel; Emulsification; Texturing.
- 7 - Lipids, vitamins, mineral, pigments, compounds responsible for flavour and aroma. Chemical properties: Autoxidation, Photoxidation, Hydrolysis and polymerization.
- 8 - Notion of toxic poison, and introduction to food toxicology. Compounds used in facing the enemies of crops, Hormonal inducers, risks to public health.
- 9 - Food additives, nomenclature, use, starches
- 10 - Problem of food poisoning caused by chemical agents, Food safety in Portugal, in Europe and in the world.

DEMONSTRATION OF THE CONTENTS COHERENCE WITH THE COURSE UNIT'S LEARNING OUTCOMES

- Points 1, 2, 4, 5, 6 and 7 of the response to the 1st goal
 Points 2 and 3 meet the 2nd goal
 Points 8, 9 and 10 provide answers to the third goal.

TEACHING METHODOLOGIES

Lectures, laboratory practices, reports and research papers.

DEMONSTRATION OF THE COHERENCE BETWEEN THE TEACHING METHODOLOGIES AND THE LEARNING OUTCOMES

The theoretical and practical complete the different sections of the programme. The theoretical lectures are exposed to the concepts, fundamentals, methods and standards to understand and apply in laboratory analysis in practical lessons.

EVALUATION METHODS

75% of practical lessons ensure the frequency practice syllabus

The frequency of practical lessons when obtained is valid for 2 years.

Midterm quizzes or final quiz and Resource quiz

Final grade = 60%Theoretical + 40% practical-theoretical

MAIN BIBLIOGRAPHY

Araújo, M., (1997) Segurança Alimentar, Méribérica/Líber, Lisboa, Portugal

Baduí Dergal, S. (2006) Química de los Alimentos, Pearson Educación, México

Belitz,H.D.,Grosch,W.(1992), Química de los Alimentos ,2ºEd, Ed.Acribia

Carmo, I.; (2004), Alimentação Saudável,Alimentação Segura, Ed. Dom Quixote

Derache R.(1996) Toxicologie et Securite des Aliments, Apria

Fennema O.,(1988) Química de los Alimentos, Editora Acribia

Flandrin,J. Massimo Montanari,(2001) História da Alimentação Ie II vol., Terramar

Pearson,D(1986)Técnicas de laboratório para el análisis de alimentos, Ed. Acribia

Year of implementation: 2014/2015 | Date of approval by the Technical-Scientific Board: 2012-10-10