

Course Unit: 935037 - Innovation in food industry

Year 3 Semester 6 ISCED Code: 721 ECTS: 3

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

COURSE COORDINATOR: João Jorge Mestre Dias

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	
75		36							39

Prerequisites (if applicable): Not applicable.

LEARNING OUTCOMES (knowledge, skills and competence)

With this curricular unit, the student should be able to identify the theoretical principles in the basis of new combinations, new textures, new ways of presenting and preserving food.

CONTENTS

1. History of food; 2. Food innovation in XXth century: case studies; 3. Consumers expectations and new consumption trends; 4. Portuguese and European legislation in food additives; 5. Innovations in functional food; 6. Innovations in food packaging; 7. Use of hydrocolloids in food industry; 8. Registration of patents and industrial property.

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

The classes of this course consist of two blocks of subjects: theoretical and practical classes. During the theoretical classes, the main concepts and theoretical principles related with fundamental food processing principles will be exposed. During the practical classes, the students will develop a project in group where they will have to conceive a new product, make a physical-chemical and rheological characterization and present the results in the specifications of the finished product.

TEACHING METHODOLOGIES

The teaching methodologies are expositive lectures of the theoretical issues, practical classes for the resolution of exercises and autonomous work for collecting information for the practical report. The theoretical classes are, essentially, expositive including the presentation of the main concepts within each chapter and the analysis of some papers related with innovations in food. Practical classes will include experimental works using hydrocolloids and using some new technologies for developing new products.

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

The proposed methodology is aimed to transmit students the fundamentals for understanding the main advances observed in the last decades and the change of habits in the consumers. The transmission of theoretical knowledgments is aimed to provide students with the essential tools for the experimental works that will take place in the pilot plant and where students will observe "in situ" the main aspects to consider in the development of new products. In this curricular unit, the proposed teaching methodologies aim to provide students with creativity and willpower to create new products or improve existing ones.

EVALUATION METHODS

The final result is evaluated in the final exam and in the classification obtained in the practical report, in which students have access after a successful participation at 75% of theoretical and practical lessons.

MAIN BIBLIOGRAPHY

Imeson, A. (2010). Food stabilisers, thickeners and gelling agents. Wiley-Blackwell.

Phillips, G. and Williams, P. (2009). Handbook of hydrocolloids. 2nd Edition. CRC Press.

Steffe, J. (1996). Rheological methods in food process engineering. 2nd Edition. Freeman Press.

Fuller, G. (2004). New food product development: from concept to marketplace. 2nd Edition. CRC Press.

Han, J. (2005). Innovations in food packaging. Elsevier.

O'Donnell, R.; O'Malley, J.; Huis, R.; Halt, G. (2008). Intellectual property in the food technology industry: protecting your innovation. Springer.

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