Code: 1799 **Food Rheology and Texture**
Degree: 2nd cycle – Gastronomical Sciences
Curricular Year: 1st **Semester Course: 1st**
Credits: 2 ECTS **Compulsory**
Language: Portuguese/English
Responsible: Isabel Maria Nunes de Sousa
Other lecturer(s): -
Web Site: http://www.isa.utl.pt/home/node/4330

1. Contact hours:
Lectures 7 **Practicals** 14 **Others** 7 **Total** 28

2. Objectives:

To understand the importance of Rheology and Texture in Gastronomical Sciences.
To master the very nomenclature of these disciplines.
To characterize the texture of foods, including handling, monitoring and control of its structure.
To identify the substances used to alter the structure of food. To know how to monitor and optimize these structures.
To identify the characteristic parameters of texture and how to use instruments to measure them.
To know the model systems: foams, emulsions and gels. How to produce, stabilize and evaluate these systems.

3. Programme:

The importance of the Rheology and Texture in Gastronomical Sciences.
The texture as a result of the molecular structure of food.
Identification of substances that can be used to create / modify the structure of food – biopolymers and enzymes.
Instrumental and sensory evaluation of texture and consistency.
Rheometry: fundamental, empirical and imitative rheological methods.
Characteristic parameters on characterization, monitoring and optimization of food structure.
The importance of the triangle, texture, color and aroma in the hedonic potential of food.
Instrumental evaluation of color and aroma.
Application to Case studies: foams, emulsions, gels, crispy foods.
The use of ingredients from the hedonic point of view as well as from the positive impact on health: herbs, mushrooms, the colors of fruits and vegetables, algae.

4. Bibliography:

Main Bibliography

GOUVEIA, L.; BATISTA, A.P.; SOUSA, I.; RAYMUNDO, A. BANDARRA, N. (2008). Microalgae in novel food products. In "Food Chemistry Research Developments". Ed. Papadopoulos, K.N. Nova Science Publishers, Inc.pp: 75-111. ISBN 978-1-60456-262-0

CASTRO, A. Gomes Editor (2003). "A Química e a Reologia no processamento dos Alimentos". Ciência e Técnica, Instituto Piaget.295 pags. ISBN: 972-771-641-5

SUNDARAM G. e Ak, M.M. (2003). "Cheese Rheology and texture". CRC Press. 434 pags. ISBN 1-58716-021-8

SOUSA, Isabel (2001). A Reologia dos Produtos Alimentares. In "Reologia e suas Aplicações Industriais". Alberto Gomes de Castro, José A. Covas e A. Correia Diogo.Eds. Ciência e Técnica, Instituto Piaget.pp: 131-158. ISBN: 972-771-382-3

5. Assessment:

Lectures for the introduction of the basic concepts (25%)
Classes of demonstration and experiments for production of model type of food and practical determinations of texture and consistency (70%).
Written exam for evaluation of individual response to questions of theoretical and practical issues (5%).

6. Estimated Workload:	56	Hours
7. Last Update:	3/1/2011	