

## 63013 - Rheology and texture of foods

### Información del Plan Docente

<b>Academic Year</b>	2018/19
<b>Subject</b>	63013 - Rheology and texture of foods
<b>Faculty / School</b>	105 - Facultad de Veterinaria
<b>Degree</b>	566 - Master's in Food Quality, Safety and Technology
<b>ECTS</b>	3.0
<b>Year</b>	1
<b>Semester</b>	First semester
<b>Subject Type</b>	Optional
<b>Module</b>	---

### **1.General information**

#### **1.1.Aims of the course**

#### **1.2.Context and importance of this course in the degree**

#### **1.3.Recommendations to take this course**

### **2.Learning goals**

#### **2.1.Competences**

#### **2.2.Learning goals**

#### **2.3.Importance of learning goals**

### **3.Assessment (1st and 2nd call)**

#### **3.1.Assessment tasks (description of tasks, marking system and assessment criteria)**

### **4.Methodology, learning tasks, syllabus and resources**

#### **4.1.Methodological overview**

This course aims at a descriptive, practical and analytical treatment of the food rheology and texture. This course starts with a description of the main rheological and textural food parameters during lectures and shows also the instruments and tests for their measurement. Finally, during the practical activities, the students will learn how to use the more important instruments for these measurements (a rheometer and a texturometer). During the video sessions the students will familiarize with other instruments and probes for rheological and textural measurements. Moreover, they will learn how to find the bibliographic references for a rheological and textural study and how to use this information.

Students are expected to participate actively in the class throughout the semester.

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### 4.2.Learning tasks

The course includes the following learning tasks:

- **Lectures** (10 hours of sessions lasting 1 or 2 hours). In these lectures, there is a presentation of the fundamentals of food rheological, textural properties, the main instruments and techniques for the measurement. Attendance is required.
- **Practice sessions** (15 hours of sessions lasting 3 or 4 hours). During these activities, the use of two instruments for rheological and textural measurements (controlled stress oscillatory rheometer and texturometer) will be taught. The main tests and probes used in foods will be explained and practical activities with some of them will be done. For the rheometer it will consist of some work with model foods (like a vegetable oil, a yogurth and a tomato puree), and for the texturometer, the explanation of how to use the equipment and software. Different tests (compression, penetration, puncture, etc) by using different probes will take place in different types of food. In the remaining sessions, the students (supervised by the professors) will practice with the equipments to carry out their specific research project. Attendance is required.
- **Seminars** (5 hours). Video sessions and bibliographic scientific research related to food rheological and textural properties and probes. Other aspects introduced to the students will be other instruments and probes for rheological and textural measurements (different to the equipments described in practical activities), and how bibliographic scientific research relates to food rheological and textural properties research. Attendance is required.
- **Assignment** (20 hours of autonomous work). Elaboration and presentation of a specific practical work.
- **Written exam** (1 hour included in one the lecture sessions). Students are expected to spend at least 25 hours of study.

### 4.3.Syllabus

The course will address the following topics:

1. Food rheology. Introduction.
2. Rheological properties and rheological models.
3. Viscometers, rheometers and measurement probes.
4. Practical applications in rheology.
5. Food texture introduction.
6. Food mechanical properties.
7. Food texture instrumental analysis.
8. Texture instrumental analysis application.

### 4.4.Course planning and calendar

The classes will be preferably during the first semester of the academic year.

The calendar of lectures and practice sessions is published during September on the website of the Faculty of Veterinary <http://veterinaria.unizar.es/>.

The appointments for tutorials will be agreed previously with the teachers.

### 4.5.Bibliography and recommended resources