

Academic Year/course: 2022/23

68762 - Rheology and texture of foods analysis

Syllabus Information

Academic Year: 2022/23

Subject: 68762 - Rheology and texture of foods analysis

Faculty / School: 105 - Facultad de Veterinaria

Degree: 631 - Master's Degree in Food Quality, Safety and Technology

ECTS: 3.0

Year: 1

Semester: First semester

Subject Type: Optional

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

This course pretends 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 theoretical 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 know other different instruments and probes for rheological and textural measurements. In any case student collaborative participation will be promoted.

4.2. Learning tasks

The program offered to the student to help him to get the expected results includes the following **activities**:

1. Lectures. 10 classroom teaching hours (1 or 2 hours sessions). In these lectures fundamentals of food rheological and textural properties and the main instruments and techniques for their measurement will be presented by audiovisual means.

2. Practical activities. 15 classroom teaching hours (3 or 4 hours sessions). 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 some work with model foods (like a vegetable oil, a yoghurt and a tomato puree) will be done. For the texturometer the use of the equipment and software will be explained to the students. Different tests (compression, penetration, puncture, etc) by using different probes will be performed in the different foods. In the remained practical sessions the students (supervised by the professors) will practice with the equipments to carry out their specific practical research.

3. Seminars: 5 classroom teaching hours. Video sessions and bibliographic scientific search related with food rheological and textural properties and probes. Other instruments and probes for rheological and textural measurements (different to the equipments described in practical activities) will be showed.

4. Preparation and presentation of a specific practical work. 10 not presential hours. 4 on site hours (included in practical activities).

5. Written exam about theoretical part. 32 not presential hours for study. 1 on site hour (included in theoretical sessions).

4.3. Syllabus

- Food rheology. Introduction.
- Rheological properties and rheological models.
- Viscometers, rheometers and measurement probes.
- Practical applications in rheology.
- Food texture introduction. Food mechanical properties.
- Food texture instrumental analysis.
- 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

Bibliography of the academic year is updated and looked up by the Library webpage. Recommended bibliography at: <https://biblioteca.unizar.es/>