

## 63024 - Food metabolites analysis at trace levels

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 63024 - Food metabolites analysis at trace levels

**Faculty / School:** 105 - Facultad de Veterinaria

**Degree:** 566 - Master's in Food Quality, Safety and Technology

**ECTS:** 3.0

**Year:** 1

**Semester:** Second semester

**Subject Type:** Optional

**Module:** ---

### 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

The learning process begins with group lectures focus on theoretical contents, combined with individual activities (problem solving, practical cases, bibliography analysis). Practical sessions in the lab will be included between the lectures in such way that students can apply the theoretical contents.

#### 4.2.Learning tasks

1. Six lectures in group (10.5 h)
2. Two assigned work presentations (3.5 h)
3. Four practical sessions at the lab (14 h)
4. One external visit (2 h)
5. Preparation of papers and reports (15 h student only)
6. Resolution of questionnaires (30 h student only)

#### 4.3.Syllabus

- Lecture 1 (2 h): Fundaments of trace analysis in food.
- Lecture 2 (2 h): Key knowledge for the analysis of trace volatiles of food (I)

- Lecture 3 (1 h): Key knowledge for the analysis of trace volatiles of food (II)
- Lecture 4 (2 h): Key characteristics of analytical techniques for the analysis of organic non-volatile trace compounds (I)
- Lecture 5 (2 h): Key characteristics of analytical techniques for the analysis of organic non-volatile trace compounds (II)
- Lecture 6 (1.5 h): Key knowledge for the identification of metabolites
- Students assigned work presentations (1.5 h)
- Practical session 1 (2 x 3.5 h): Isolation and determination of volatile compounds
- Practical session 2 (2 x 3.5 h): Biogenic amines analysis through SPE isolation, derivatization and determination by HPLC with fluorescence detection
- Practical session 3 (2 x 3.5 h): A tutor will be assigned to each student. The tutor will show the student an analytical method working in a real laboratory. The student will look for information about the method to learn about its way of working, applications, limitation and analytical performance. The student will prepare a report with such information that will be presented in public

#### **4.4.Course planning and calendar**

Further information concerning the timetable and lectures and work presentations concerning to dates and important events related to the subject are in details described in the Faculty of Veterinary Science website: (<http://veterinaria.unizar.es/>). This website is updated at the beginning of the academic course.

Course will be start with lectures while practical sessions will be introduce after the corresponding theoretical contents.

#### **4.5.Bibliography and recommended resources**

Recommended bibliography at: <https://biblioteca.unizar.es/>