Universidad Zaragoza

Year : 2019/20

63007 - Food enzymology

Syllabus Information

Academic Year: 2019/20
Subject: 63007 - Food enzymology
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 methodology followed in this course is oriented towards achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as:

- Previous reading of the recommended bibliography.
- Brief theoretical explanation.
- Explanation of the methods to be used.
- Practical help to carry out the experiments.
- Guidance to evaluate the results of the experiments.

4.2.Learning tasks

The learning activities of this course are basically of practical type with a brief theoretical explanation at the beginning of each session.

4.3.Syllabus

The course will address the following topics:

Topic 1. Enzyme extraction methods. Procedures to maintain enzyme activity

Topic 2. Enzyme concentration and salting out

Topic 3. Activity measurements:

- i. PME. Potentiometric method
- ii. EndoPG: sampling method + chemical analysis and viscosimetric method
- iii. PPO: continuous indirect spectrophotometric method
- iv. Pepck: coupled essays
- v. LOX: continuous indirect spectrophotometric method

Topic 4. Purification and measurement of protein concentration. SDS-PAGE, chromatography

Topic 5. Kinetic parameter calculation (Km, kcat, kcat/Km)

Topic 6. The effect of temperature on enzyme activity and stability. Dt, z and Ea values calculations. Measurement of the energy of activation of an enzyme catalyzed reaction

Topic 7. Enzyme inhibition. Inhibitor effect on Km and kcat. Ki calculation

4.4.Course planning and calendar

Further information concerning the timetable, classroom, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the Faculty of Veterinary website https://veterinaria.unizar.es/

4.5.Bibliography and recommended resources