FOOD COMPLEMENTARY ANALYSIS

Code: 9847042 Curricular Year: 5th Semester: 1st Optional Credits: 2.5 ECTS

Lecturer(s): António Salvador Barreto (CCP), Marília Catarina Ferreira (R), Teresa Semedo Lemsaddek

1. Contact hours:
Lectures - 14 hours **Praticals -** 14 hours **Total –** 28 hours

2. Objectives:
The quality and safety of foods assume a proactive attitude in the system of obtaining agri - food products, and to conduct laboratory analysis is one means of ensuring that preventive posture. In this course is intended - to acquire knowledge at the level of DNA extraction from different food matrices and identification of potentially pathogenic microorganisms if presents, using methods of molecular biology; acquisition of knowledge of analysis and interpretation of the obtained results; acquisition of critical capacities and integration of acquired knowledge for future application in quality control of food and thereby contribute to meet the growing demands of the consumer about food, in order to obtain a safe and balanced diet.
The students should be able to integrate knowledge regarding the presence of pathogenic bacteria in foodstuffs, contributing to the consumer‘s desire of safe foods and equilibrate diet.

3. Programme:
Theoreticals - The importance of detecting/quantifying pathogens in food. Food poisoning. Pathogenic microorganisms in food: examples. Sampling and sample preparation. Molecular detection (PCR, FISH, other approaches). Validation and detection limits. Data analysis, including evaluation of reproducibility and repeatability.

Practicals - Sampling. DNA extraction from distinct food matrixes (dairy, meat, and fish products and water). Molecular detection of pathogens (*Salmonella*, *E. coli*, *Listeria*), in food. Data analyis and general conclusions

4. Bibliography:
Liu, D. (Ed.) (2009). Molecular Detection of Foodborne Pathogens. Taylor and Francis Group CRC Press.

5. Assessment:
Preparation of a report on the matter addressed in practical classes (30%). Final examination on the theoretical issues (70%).