

FOOD BIOCHEMISTRY

Study Programme: MEZ/PA **Curricular Year:** 1st **Semester:** NA **Optional** **Credits:** 3.0 ECTS

Lecturer(s): José A. Mestre Prates (CCP e R), Cristina Alfaia, Paula Lopes

1. Contact hours:

Lectures – 20, Practicals – 10, Total – 30

2. Objectives:

Learning of the general concepts and fundamentals of chemical composition, analytical methodology and food properties, as well as its chemical reactivity during processing and storage.

3. Programme:

3.1. Theoretical: Introduction to food biochemistry; water; proteins; enzymes; minerals; lipids; vitamins; carbohydrates; additives; biochemistry of edible muscle tissues; biochemistry of milk; biochemistry of eggs; biochemistry of honey; biochemistry of edible plant tissues; bioactive components; food biotechnology.

3.2. Practical: Determination of total lipids; fatty acid and CLA profiles; determination of cholesterol; determination of liposoluble vitamins; extraction and quantification of total RNA from food systems; quantification of food components by RT-PCR.

4. Bibliography:

Prates, J. et al. (2017). *Textos de Apoio das Aulas*, 2021.

Damodaran, S. et al. (2008). *Fennema's Food Chemistry*, CRC Press (Taylor & Francis Group), 4th ed., 2008.

Instituto Nacional de Saúde Dr. Ricardo Jorge (INSA, 2006). *Tabela da Composição de Alimentos*, Centro de Segurança Alimentar e Nutrição, Lisboa.

Francis, F. (ed.) (1999). *Wiley Encyclopedia of Food Science and Technology*, 4 Volumes, 2nd ed., 1999.

5. Assessment:

Theoretical: written examination (60% of final classification). Practical: written examination (20% of final classification). Monograph work about specific food topic (20%).