

Course Unit	Bromatology	Field of study	Therapy and Rehabilitation
Bachelor in	Dietetics and Nutrition	School	School of Health
Academic Year	2019/2020	Year of study	1
Type	Semestral	Semester	2
Workload (hours)	135	Contact hours	T - 30 TP 30 PL 30 TC - S - E - OT 6 O -
		Level	1-1 ECTS credits 5.0
		Code	8149-501-1204-00-19

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Maria Fátima Alves Pinto Lopes da Silva

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. To know the components of foods, intrinsic or added; to have knowledge related to their classifications, composition, nutritional and healthy value; changes made by preparation and cooking operations;
2. To relate the chemical composition of foods with its nutritional, sensorial, technological and stability properties;
3. To know the basics of food analysis.

### Prerequisites

Before the course unit the learner is expected to be able to:

Will have to possess knowledge in the domains of general biochemistry and general microbiology.

### Course contents

Theoretical Program: Present scope of Bromatology; food components; qualification of foodstuffs; main food groups composition. Changes in food composition. Practical Program: Laboratory safety; Food analysis; Accomplishment, in laboratory, of practical protocols related to general physicochemical analysis and special analysis in foodstuffs; Characterization of various foodstuffs.

### Course contents (extended version)

1. INTRODUCTION
  - Interest of Bromatology in curricula of Diethetic studies. Historic appointment. Basic concepts.
  - Qualification of foodstuffs. FoodEx2 classification.
2. FOOD COMPONENTS AND ITS CHANGE WITH TIME AND PREPARATION/COOKING OPERATIONS
  - Water: importance for human health, food structure and stability; water activity;
  - Amino acids, peptides and proteins: reactivity, types of proteins presents in foodstuffs, properties;
  - Carbohydrates: main entities with food interest, properties; diethetic fiber;
  - Lipids: properties, chemical changes, chemistry of fried foods;
  - Minerals and Vitamins: main sources, bioavailability and nutritional requirements;
  - Compounds with additional interest for human health: antioxidant compounds; probiotics; prebiotics;
  - Food additives: use requirements and classes;
  - Enzymatic and non-enzymatic browning in foods;
  - Presence of residues and contaminants.
3. FOOD COMPOSITION BY GROUPS
4. PRACTICAL PROGRAM
  - Laboratory safety.
  - Food analysis: main types; interest and limits in chemical composition; nutritional value;
  - Selection of analysis type; Food samples preparation.
  - Practical protocols concerning general physico-chemical and special determinations in foodstuffs.

### Recommended reading

1. Belitz, H. -D. ; Grosch, W. ; Schieberle, P. (2009). Food Chemistry, 4th Edition, Springer Verlag. Secaucus, New Jersey, U. S. A.
2. Fennema, Owen R. (2000). Química de los alimentos. Ed. Acribia S. A. , Zaragoza. (1258 p. )
3. (2006). Tabela da Composição de Alimentos. Instituto Nacional de Saúde Dr. Ricardo Jorge
4. European Food Safety Authority, 2015. The food classification and description system FoodEx2 (revision 2). EFSA supporting publication 2015: EN-804. 90pp.

### Teaching and learning methods

Theoretical lessons: expositive and interrogative method. Practical lessons: demonstrative and active methods, in laboratory. Personal and/or tutorial study: reading of the recommended bibliography, electronic sources and documents provided by teacher.

### Assessment methods

1. Alternative 1 - (Regular, Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 90% (Written theoretical and practical exam.)
  - Presentations - 10% (Bibliographic search works)
2. Alternative 2 - (Regular, Student Worker) (Final)
  - Intermediate Written Test - 45% (Written test of the first half of practical and theoretical subjects.)
  - Intermediate Written Test - 45% (Written test of the second half of practical and theoretical subjects.)
  - Presentations - 10% (Bibliographic search works)

### Language of instruction

1. Portuguese, with additional English support for foreign students.
2. Spanish

## Electronic validation

Maria Fátima Alves Pinto Lopes da Silva	Juliana Almeida de Souza	Antonio Jose Madeira Nogueira	Adília Maria Pires da Silva Fernandes
03-03-2020	30-03-2020	30-03-2020	30-03-2020