

Food Technology

Calendar: 6th semester

Contact Hours: T: 30,0, TP: 30,0; OT: 7,5

Syllabus:

1 Introduction to food technology. Basic notions of food safety and quality. Brief notions of food properties and main processing and conservation methods. Concept of food microbiology. 2. Properties and quality of foods. Main components, nutritional value. Physical-chemical, microbiological and sensorial analysis. Notions of conservation and changes of food properties. Effects of chemicals, physical and biological agents and processing and water activity. 3. Unit operations of food Processing and conservation used in food manufacturing: Room-temperature processing: previous food treatment (receiving, sorting, classifying) mixing, size reduction. Separation of food components. Food biotechnology (fermentation, gene modification, nutritional genomics, functional foods, use of enzymes, microencapsulation and controlled release, antimicrobial ingredients, probiotics); Irradiation; food processing by electric field, pressure, light, and ultrasounds. heat processing: heat transfer in food; blanching, pasteurization, heat sterilization, evaporation and distillation, extrusion, dehydration, effects on food properties, enzymes and microbial contents. Processing by heat removal: Chilling and modified atmospheres; Freezing; Freeze drying and freeze concentration; Lyophilization. Post Processing operations: Packing and storage. 4. Food legislation and responsible institutions. Innovation in Food Technology.

Demonstration of the syllabus coherence with the curricular unit's intended learning outcomes.

The most common operations and processes used in the different industries of food processing, in terms of conception and application, are approached in this curricular unit, to broaden the students knowledge and prepare him to work in this field, being this a major objective.

In this context, the syllabus contents of this curricular unit includes basic notions on the properties and characteristics of food, broaching also diverse analytical techniques commonly used in food industry, and also the procedures to produce and transform food elements. The technological processes associated to the preservation and conservation of food will also be broached.

Teaching methodologies (including evaluation):

Theoretical class about the syllabus content will be lectured with the aid of powerpoint slides. In the practical courses, exercises that apply the theoretical concepts will be presented for resolution. Also, the students will prepare and present reports about diverse aspects related to food technology, as small seminars. An open discussion of each work will be stimulated. The evaluation will be made as 60 % from a final theoretical exam, and 40 % from a practical evaluation (reports presentation and discussion, and continuous evaluation of in class performance).

Demonstration of the teaching methodologies coherence with the curricular unit's intended learning outcomes.

This curricular unit is organized with a theoretical component that comprises the syllabus' contents exposition, so as to transmit the basic concepts on food technology. As a learning complement, the practical component of this curricular unit will contextualize the theoretical contents with practical applications associated to the food industry. The practical courses will thus include solving practical exercises about the lectured themes, and the presentation and discussion of reports on diverse aspects of food technology, which will foment a better conceptual acquisition and the development of skills for autonomous work in the area of food technology.