

Course Syllabi

1. INDU-00024 BIOCHEMICAL FOODS

2. Instructor:

- Silvana Patricia Donoso Moscoso

3. Bibliography

- Química de los alimentos. https://sgb.ucuenca.edu.ec/cgi-bin/koha/opac-detail.pl?biblionumber=65389&query_desc=kw%2Cwrdl%3A%20quimica%20de%20alimentos, Badui Dergal, Salvador, 2013
- La ciencia de los alimentos en la práctica., Badui, Salvador, 2012

4. Specific Course Information

- a. Food Science studies the chemical and biochemical composition of food. In particular, Food Biochemistry is the discipline in which Biology, Chemistry and Physics are used to study the composition, properties and changes of food, the causes of its different types of deterioration and the fundamental principles of its processing. Thus, this subject provides students with basic knowledge about composition, physical properties, chemistry and biological and the principles of the changes suffered by food with the aim of applying this knowledge in the prevention, modification or control of processes along the food chain that includes the selection, preservation, processing, packaging, distribution, and use of healthy, healthy and nutritious foods according to the specifications and regulations of the industry. This subject contributes in the following numbers to the career graduation profile: 1. Applying the 6. Controlling experiments and processes in the field of chemical engineering, considering transport phenomena, unitary operations, chemical processes, and operational research, in order to obtain relevant information and meet previously defined objectives. 8. Recognize the value of ancestral knowledge, enabling its incorporation in professional practice, to develop new products, innovate and optimize traditional productive practices.

b. Prerequisites:

- INDU-00033 Industrial microbiology
- INDU-00023 Instrumental analysis

5. Learning Objectives of the Course

- a. To define the chemical, physical and functional properties of food and its components, as well as its mechanisms of deterioration. - To relate knowledge about composition, structure and properties to biochemical reactions that can occur in the management of food. - To know the reactions of deterioration of food.

b. Learning Outcomes

1. Describe the chemical structure and properties of food components and their importance in food matrices
2. Describe the activity of water in food and how it influences it.
3. Identify the food groups and the changes that may occur during their management.

6. Course Topics

1. General
2. Water
3. Carbohydrates
4. Lipids

5. Proteins
6. Vitamins and mineral
7. Additives
8. Enzymes