

Course Syllabi

1. INDU-00040 INDUSTRIAL PROCESSING OF CEREALS AND FERMENTATIONS

2. Instructors:

- Gonzalo Javier Astudillo Ochoa
- Jaime Estuardo Cuenca Leon

3. Bibliography

- Microbiología industrial., Lagarda, G. G., 2018
- Los microorganismos desde una perspectiva de los beneficios para la salud, V. (2015). , 2015
- Los 23 usos de los microorganismos en la industria, Beltrán, P., 2020
- CÓDIGO DE PRÁCTICAS DE HIGIENE PARA LA LECHE Y LOS PRODUCTOS LÁCTEOS, Codex alimentario, 2022
- Introduction to industrial microorganisms., R. Nithya M. Phil (Ph. D), 2021

4. Specific Course Information

- a. The subject of industrial processing of cereals and fermenting, which is taught within the course of Chemical Engineering, seeks that students acquire the theoretical-practical knowledge necessary with respect to generalities for the processing of cereals and fermented by applying substrates susceptible of fermentation with micro-organisms participating from foods of animal, plant and milk origin for the development of certain experiments. and learning of the present subject are in full agreement with the graduate profile of the Chemical Engineer in the following aspects: Control experiments and processes in the field of Chemical Engineering, considering transport phenomena, unitary operations, chemical processes, and operational research, to obtain relevant information and meet previously defined objectives. Recognize the value of ancestral knowledge, enabling its incorporation into professional practice, for to develop new products, innovate and optimize traditional productive practices. To act with respect and commitment to the environment, applying management practices and technologies, that allow it to minimize the environmental impact generated by productive activities. To act with professional ethics, considering the social and economic impact of its professional exercise, in the normative areas related to quality, health and safety and the environment.

b. Prerequisites:

- INDU-00039 II: Proc. ind. dairy and meat.
- INDU-00041 II: Thermal food proc.

5. Learning Objectives of the Course

- a. To obtain that the student acquires, develops, assimilates the theoretical foundation necessary to create skills in the industrial processing of cereals and fermenting, as well as to understand details of the control at the industrial level. - To know the fundamentals and characteristics of the methods used for the industrial processing of cereals and fermenting - To identify the different techniques for the fermentation of food of animal, plant and dairy origin. - To apply in practice the p basic frictions for the fermentation of food - Teach the student to work as a team to share responsibilities, as well as strategies of organization and cooperation.

b. Learning Outcomes

1. Evaluates the adequacy of fermented product processing technologies
2. It applies basic concepts in an appropriate way for the development of experiments.
3. Implements technologies related to the physical and chemical transformation of raw material,

effectively, incorporating technological improvements or innovations.

4. It understands and applies the basic processes for the processing of cereals and fermented.

6. Course Topics

1. General
2. Food food
3. Fermented foods of milk origin
4. Fermented food of animal origin
5. Fermented foods of vegetative origin