

Course Syllabi

1. INGE-00035 CALOR TRANSFER

2. Instructor:

- Luisa Mayra Vera Cabezas

3. Bibliography

- TRANSFERENCIA DE CALOR Y MASA , Yanus A. Cengel, AFSHIN J. GHAJAR Oklahoma , 2011

4. Specific Course Information

- a. This subject refers to the study of the basic principles of Heat Transfer with a practical approach, allowing the student to relate mathematical models to the functioning of heat exchange teams, within the field of chemical engineering, with the ability to train and act with multidisciplinary teams, and to propose technical and viable alternatives to problems that arise within the working environment. It is important to promote disciplinary skills by strengthening the knowledge of Heat Transfer and its application at the industrial level. The Heat Transfer course contributes to the learning achievements of the graduation profile in: 1. Apply knowledge and skills in mathematics, physics and chemistry, effectively, as basic tools for solving problems in the field of Chemical Engineering. 2. Use specialized software packages, effectively for solving problems of chemical operations and processes and design. 3. Apply the basic foundations of training research, at the exploratory and diagnostic levels, in an appropriate way, for the development of experiments, for the search, selection and evaluation of information, preparation of bibliographical essays and academic articles and for the communication of findings.

b. Corequisites:

- INGE-00037 Mass transfer

c. Prerequisites:

- CCFF-00037 Chemical physics
- INGE-00023 Computer drawing
- INGE-00021 Material and energy balances
- MAES-00092 Numerical analysis

5. Learning Objectives of the Course

- a. Apply the knowledge and skills of Heat Transfer, effectively, as a basic tool, for problem solving. - Establish the basic principles of Heat Transfer (Driving, Convection and Radiation), as well as heat exchange equipment - Compare the different forms of heat transfer (driving, convection and radiation) and its relationship with unitary operations for the resolution of exercises - Generate capacity for analysis, synthesis, planning, organization and decision-making in heat transfer processes, within an industry or production process

b. Learning Outcomes

1. They simulate chemical industrial processes and operations, using computational tools, to establish relationships between variables that allow adequate decision-making.
2. They use specialized software packages, effectively for troubleshooting operations and chemical processes and plant design.
3. They implement technologies related to the physical and chemical transformation of materials, effectively, incorporating technological improvements or innovations.

4. Apply knowledge and skills in mathematics, physics and chemistry effectively as basic tools for problem solving in the field of chemical engineering.

6. Course Topics

1. Basic principles of heat transfer
2. Transfer of heat by driving
3. Transfer of heat by convection
4. Heat exchange
5. Transfer of call by radius
6. Combined exercises