

Course Syllabi

1. INGE-00028 UNITAR OPERATIONS I FILTRATION AND FLUIDIZATION

2. Instructor:

- Maria Eulalia Peñafiel Tenorio

3. Bibliography

- Operaciones básicas de Ingeniería química, McCabe, Warren L Smith, Julian C, null
- Problemas de ingeniería química: operaciones básicas , Ocon García, Joaquín Tojo Barreiro, Gabriel, 1978
- Operaciones básicas de la ingeniería química, George Granger Brown, null

4. Specific Course Information

- a. This subject addresses the study of unitary flow operations through porous bed, fluidization, filtration and their applications in the field of chemical engineering, design and equipment management. It is aimed at promoting scientific knowledge and experiences – technical for the solution and management of these operations in the industry. This subject contributes to the following achievements of career learning: - 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. - Implement technologies related to the physical and chemical transformation of materials, effectively, incorporating technological improvements or innovations - 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. - 13. Act with respect and commitment to the environment, applying management practices and technologies, that allow you to minimize the environmental impact generated by productive activities

b. Corequisites:

- INGE-00032 Industrial health and safety

c. Prerequisites:

- INGE-00035 Heat transfer
- CCFF-00038 Engineering Reactions I
- INGE-00037 Mass transfer
- INGE-00036 Fluid transfer

5. Learning Objectives of the Course

- a. Apply the fundamental concepts of the flow through porous bed, fluidization and filtration, in the resolution of exercises and practical problems of the industry, analyzing the variables that intervene in the operations for its management at an industrial level. - Analyze and apply the operation of a porous medium - Know and apply the operation of fluidization and the fundamental variables that intervene in it - Know, analyze and apply the filtration operation and the different types of filters as well as the variables involved in the process.

b. Learning Outcomes

1. Identify, apply and design fluidisation processes and applications
2. Identify, apply and design fluidisation processes and applications
3. Identify, apply and design fluidisation processes and applications

4. Conduct filtration calculations in different types of filters, as well as the variables involved in the process.
 5. Conduct filtration calculations in different types of filters, as well as the variables involved in the process.
 6. Conduct filtration calculations in different types of filters, as well as the variables involved in the process.
 7. Identify, apply and design fluidisation processes and applications
 8. Identify and apply fluid passage through porous bed
 9. Identify and apply fluid passage through porous bed
6. Course Topics
1. Introduction. past of fluids through porous facts
 2. The fluidization process.
 3. Theory of filtration, classification of filtration
 4. Cycles of filtration