SUBJECT TEACHING GUIDE

G772 - Basic Operations in Fluids Mechanics

Degree in Chemical Engineering

Academic year 2019-2020

1. IDENTIFYING DATA					
Degree	Degree in Chemical Engineering			Type and Year	Compulsory. Year 2
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Thermodynamics, Heat Transmission and Fluid Mechanics Module: Compulsory Training in Common with the Industrial Branch				
Course unit title and code	G772 - Basic Operations in Fluids Mechanics				
Number of ECTS credits allocated	6	Term		Semester based (2)	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. DE QUIMICA E INGENIERIA DE PROCESOS Y RECURSOS.
Name of lecturer	ANA ANDRES PAYAN
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Other lecturers	EVA CIFRIAN BEMPOSTA

3.1 LEARNING OUTCOMES

- - Be able to analyze the basics of fluid flow; internal circulation of fluid flow through beds, fluidized beds flow, sedimentation, filtration and stirring and mixing.
- Resolve problems of fluid mechanics related to chemical engineering.

4. OBJECTIVES

Analyze the fundamentals of fluid flow, to study systematically the basic operations controlled by the transfer of momentum, and the systematic design of different equipments.

6. COURSE ORGANIZATION

CONTENTS	
1	SECTION 1: FLUID MECHANICS. ITEM 1. STATIC OF FLUIDS; ITEM 2. BASIC EQUATIONS FOR FLOW OF FLUIDS; ITEM 3. FLOW OF NEWTONIAN FLUIDS INCOMPRESSIBLE IN TUBES; ITEM 4. COMPRESSABLE GAS FLOW; ITEM 5. MOLECULAR FLOW; ITEM.6. NON-NEWTONIAN FLUIDS;
2	SECTION 2: BASIC OPERATIONS OF FLUID FLOW . ITEM 7. INTERNAL CIRCULATION OF FLUIDS; ITEM 8. FLOW THROUGH STUFFED BEDS; ITEM 9. FILTRACION; ITEM 10. FLOW IN FLUIDISED BEDS; ITEM 11. SEDIMENTATION; ITEM 12. STIRRING AND MIXING OF LIQUIDS

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Continuous assessment is done throughout the course	Written exam	No	Yes	90,00
Group work of a Case Study	Work	No	No	10,00
TOTAL				100,00

Observations

Continuous assessment involves the obligation of the student attendance at classes

Observations for part-time students

The final assessment for part-time students will be a percentage weight of 60% in the final assessment of the subject. And the assessment of two individual works associated with each of the blocks assigned along the course will mean the remaining 40% of the final assessment.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

- Mcabe, W.L., Smith, J.C., Harriott, P. Operaciones Unitarias en Ingeniería Química (7Ed.), Mcgraw-Hill, 2007.
- Wilkes, J.O. Fluid Mechanics for Chemical Engineers with Microfluids and CFD (2Ed.), Prentice Hall, 2006.
- Levenspiel, O. Flujo de Fluidos e Intercambio de Calor (2Ed.), Reverté, 2004.
- Nevers, N. Fluid Mechanics for Chemical Engineers (3Ed.), McGraw-Hill, 2004.