



COURSE: Chemical plants			
ACADEMIC YEAR: 2016-2017			
TYPE OF EDUCATIONAL ACTIVITY: (Basic, Characterizing, Affine, Free choice, Other)			
TEACHER: Antonio Telesca			
e-mail: antonio.telesca@unibas.it		website:	
phone: +390971205225		mobile (optional):	
Language: Italian			
ECTS: 6	n. of hours: 54	Campus: Potenza School of Engineering Program: Mechanical Engineering	Semester: II
EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES Knowledge of (i) unit operations in terms of main principles of physics and their mathematical formulations, (ii) aspects related to the combustion processes inside fluidized bed reactors, (iii) solid particles removal techniques from gaseous streams.			
PRE-REQUIREMENTS None.			
SYLLABUS Solid, liquid and gaseous fuels. Mass Transfer Operations. Phase Relations. Equilibrium Stage Calculations. Countercurrent Multistage Operations. Countercurrent Multistage Operations with Reflux. Simplified Calculation Methods. Multicomponent State Operations. Molecular Transport Mechanism. Mass Transfer and its applications. Ideal chemical reactors. Operations involving solid particles. Principles of combustion. Fundamentals of fluidized bed technology. Innovative technologies for the CO ₂ capture and storage.			
TEACHING METHODS Theoretical lessons, Classroom tutorials.			
EVALUATION METHODS Written examination. Sintetizzare in lingua inglese i contenuti di dettaglio riportati nella scheda in lingua italiana.			
TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL <ul style="list-style-type: none">• Notes from lessons.• W.L.Mc Cabe, J.C. Smith, P. Harriott, Unit Operations of Chemical Engineering. Mc Graw-Hill.• A.s. Foust, L.A. Wenzel, C.W. Clump, L. Maus, L.B. Andersen, I principi delle operazioni unitarie. Ambrosiana.• J.G. Yates, Fundamentals of fluidized-bed chemical processes. Butterworths.• C. Brisi. Chimica Applicata. Editrice Levrotto & Bella.• R. B. Bird e W. E. Stewart – Fenomeni di Trasporto – Casa Editrice Ambrosiana – Milano.• Perry's Chemical Engineer's Handbook.			
INTERACTION WITH STUDENTS Wednesday 3-5 pm. Other appointments can be arranged with students by e-mail.			
EXAMINATION SESSIONS (FORECAST)¹ 15/02/2017; 22/03/2017; 26/04/2017; 24/05/2017; 28/06/2017; 24/07/2017; 18/09/2017; 18/10/2017; 29/11/2017; 13/12/2017			
SEMINARS BY EXTERNAL EXPERTS YES X NO <input type="checkbox"/>			
FURTHER INFORMATION			

¹ Subject to possible changes: check the web site of the Teacher or the Department/School for updates.



Università degli Studi della Basilicata
Scuola di Ingegneria