Università degli Studi della Basilicata
Scuola di Ingegneria

COURSE: Chemical Plants

TEACHER: Antonio Telesca

e-mail: antonio.telesca@uinbas.it | website:

Language: Italian

ECTS: 6	n. of hours: 54	Academic year: 2015-2016	Campus: Potenza	Semester: II

TOPICS

Unit operations introductions. Main characteristics related to operations involving solid particles. Principles of combustion. Fundamental aspects of the fluidized bed combustion technology.

TEACHING METHODS (please tick one or more options)

X Theoretical lessons
X Tutorials in classroom
□ Tutorials in laboratory
□ Project works
□ Technical visits
Other activities (please specify) _____

TEXTBOOKS

- 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, Foundamentals 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.

ON-LINE EDUCATIONAL MATERIAL

web address:

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.

REQUIREMENTS

None

EVALUATION METHODS (please tick one or more options)

□ Intermediate verifications
X Written examination
□ Discussion of a project work
□ Practical test
□ Oral examination
Other methods (please specify) _____

DETAILED CONTENT

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.

EXAMINATION SESSIONS (FORECAST): 14/01/2016; 22/02/2016; 18/04/2016; 23/05/2016; 27/06/2016; 21/07/2016; 19/09/2016; 17/10/2016; 21/11/2016; 19/12/2016.

SEMINARS BY EXTERNAL EXPERTS YES X NO □

FURTHER INFORMATION