Design of Industrial Plants TOT

Year 2018-2019 60

Teacher M.Campolo

Topics **33** **15** **6** **6**

Day		Topic	Lesson	Exe	Did.Labs	Int Exe
Me	03/10/18	Motivation and objectives: processes, P&I and unit operations. Tanks design: storage, containment, equalization. Tanks dynamics (filling, emptying).	2			
Ve	05/10/18	Transport of incompressible fluids: continuity and Bernoulli equations, Sizing of Hydraulic lines	2			
Me	10/10/18	Optimal diameter of pipings. Sizing of Hydraulic lines (exe)		2		
Ve	12/10/18	Trasport of compressible fluids: differential form of bernoulli equation, conservation of mass; adiabatic efflux from reservoir	2			
Lu	15/10/18	Laboratory experience: devices for measurements of pressure drop and flow rate; measurements of pressure drop on hydraulic line. Pump characteristic curve.			2	
Me	17/10/18	Isothermal/adiabatic flow along pipelines	2			
Ve	19/10/18	Transport of compressible fluid (exe)		2		
Lu	22/10/18	Laboratory experience: filling/emptying of gas reservoir, pressure drop in compressible flow			2	
Me	24/10/18	Particle dynamics: forces acting on particles, stopping distance, terminal velocity	2			
Ve	26/10/18	Particulate matters: size distribution andi other relevant properties	2			
Me	31/10/18	Particulate dynamics (exe)		2		
Ve	02/11/18	Fluidization and systems for pneumatic transport	2			
Lu	05/11/18	Transport of compressile fluid/Fluidization systems (EXE)				2
Me	07/11/18	Multiphase flows: flow regimes and pressure drops	2			
Ve	09/11/18	Flow through porous media; packing characteristics, Ergun equation for pressure drop	2			
Lu	12/11/18	Laboratory experience: pressure drop in multiphase flow			2	
Me	14/11/18	Mechanical separation of solids: collection mechanisms, collection efficiency, pressure drop, design criteria		2		
Ve	16/11/18	Mechanical separation systems: settling chambers, Electrostatic precipitators; sizing and costs	1	1		
Me	21/11/18	Sizing of settling chambers, ESP, cyclonic devices (exe)	1	1		
Ve	23/11/18	Cloth Filters: filtration velocity, pressure drop, costs	1	1		
Me	28/11/18	Heat transfer: conduction, convection, radiation. Overall heat transfer coefficient. Tubular heat exchanger (co/counter flow)	2			
Ve	30/11/18	Heat exchanger: dT-lm, sizing of devices	1	1		
Lu	03/12/18	Heat exchanger (exe)				2
Me	05/12/18	Mass transfer: Fick law, diffusion to/from droplet/film	2			
Ve	07/12/18	Mass transfer coefficient, mass transfer across interfaces (two-film theory)	2			
Me	12/12/18	Gas cleaning: absorption/desorption	1	1		
Ve	14/12/18	Absorption columns: plate/packing columns	1	1		
Lu	17/12/18	Esercizi assorbimento				2
Me	19/12/18	Fluidodynamic sizing of packing columns (flooding, loading, …), calculation of column height	2			
Ve	20/12/18	Equilibrium stage operations: leaching	1	1		