

		UNIVERSITY OF EAST SARAJEVO					
		Faculty of Technology Zvornik					
		Study program: Chemical Engineering and Technology					
		CYCLE I		YEAR III			
Course title		PROCESS EQUIPMENT DESIGN					
Department		Department for Process Engineering-Faculty of Technology Zvornik					
Code		Status		Semester		ECTS	
		Obligatory		VI		4	
Teacher		Mitar Perusic, PhD full professor					
Teaching assistant		Dusko Kostic, MSc, teaching assistant					
Teaching workload/Number of hours (weekly)			Individual work (hours per semester)			Student's work coefficient, S ₀	
Lectures	Auditory exercises	Laboratory Exercises	Lectures	Auditory exercises	Laboratory Exercises	S ₀	
2	1	0	30	15	0	1.50	
2*15 + 1*15 + 0*15 = 45 h			2*15*1.50 + 1*15*1.50 + 0*15*1.50 = 67.5				
Total course workload (hours per semester, teacher + student): 45+ 67.5 = 112.5							
Learning outcomes		After finishing the course, students will be able to: <ol style="list-style-type: none"> find and use literature data on individual process equipment understand individual technological processes and requirements regarding process equipment size the process equipment carry out the selection of optimal process equipment required by a certain technological process. 					
Prerequisites		None					
Teaching methods		Lectures, class exercises and individual work					
Syllabus outline per week		<ol style="list-style-type: none"> Introduction to design. Concept and types of process equipment, classification. Primary process equipment. Secondary process equipment. Heat exchange devices. Types and characteristics. Basic elements for the design of heat exchangers. Columns: methods of achieving contact, selection of column type, choice of floor type, calculation of binary and multicomponent mixtures. Filling columns, filler type and size, column hydrodynamics, column diameter, height, calculation of columns, columns with vertical floors. Elements for designing columns. Mid-term test/Colloquium 1. Separation devices: precipitators, filters, centrifuges. Crystallizers: types, options, calculation. Drying devices, basics for dimensioning and design. Pumps and compressors. Storage of liquids, gases and solids. Transport of liquids and gases. Design requirements. Analysis of engineering thermodynamics chapters (seminar paper presentation). Mid-term test/Colloquium 2. 					
Main literature							
Author/s		Title, publisher		Year	Page		
J. R. Couper, W. R. Penney, J. R. Fair, S. M. Wallas		Chemical Process Equipment, revised 2 nd edition, Elsevier		2009	1-781		
Additional reading							
Author/s		Title, publisher		Year	Page		
F. sef, Ž. Olujic,		Design of process plants, SKTH, Zagreb,		1988	1-536		
G. Towler, R. Sinnott		Chemical Engineering Design, Elsevier		2008	541-1060		
E. Beer		Manual for sizing chemical process industry devices, SKTH, Chemistry in Industry, Zagreb		1994	1-805		
Obligations, assessment methods and		Type of student evaluation			Points	Percentage	
		Pre-exam obligation					
		Attendance			6	6 %	

grading system	Mid-term test I	25	25%
	Mid-term test II	25	25 %
	Seminar paper	14	14 %
	Final exam		
	Final exam	30	30 %
TOTAL	100	100 %	
Web page	www.tfzv.ues.rs.ba		
Date	2023		