

COURSE TITLE		POLYMER PRODUCT DESIGN					
Course code	DST026	Year of study	1 st				
Lecturer(s)	Danijela Pezer, senior lecturer	ECTS (Number of credits allocated)	6				
Associates	/	Total lesson hours per semester	Lecture	Seminar	Practical	Laboratory	
			30	15	15		
Course status	Elective	Percentage share of e-learning	10%				
COURSE DESCRIPTION							
Course Objectives	• Understanding the basic processes of polymer materials processing • Acquisition of basic knowledge and skills needed for plastic products design with a modern approach of product development • Introducing students with a modern approach of development and polymer products design which include integrated technological consideration of product development (in addition to technical criteria, social, environmental and economic aspects of the product and its development are also taken into account)						
Course enrolment requirements and entry competencies required for the course	/						
Learning outcomes On successful completion of this course, student should be able to:	1. Compare the main groups of polymeric materials 2. Describe the production processes of polymer materials processing 3. Define the criteria of production, materials and production process 4. Present the systematics of polymer product development 5. Compare the development of a polymer product in relation to a metal product 6. Solve an example for design development of a selected plastic product						
Course content	<i>Introduction. Classification and labeling polymer materials. Polymer additives. Materials selection. Properties of polymer materials. Material testing methods. Working with databases. Production processes. Technological design of injection-molded products. Rules for proper technological design of moldings. Simulation of polymer melt flow (Moldflow).</i> <i>Calculations: Polymer construction elements for joining (snap rings,sShaft connections with hub, screw joint, welded joint, glued joint, rivet joint), bearings, polymer gears, belt transmission, ropes, wheels, couplings, springs.</i>						
Types of teaching:	☒ lecture ☒ seminars and workshop ☒ practical ☐ combined e-learning ☐ field research		☒ self-study ☐ multimedia ☒ laboratory ☐ mentoring work ☐ (others)				
Student obligations	Attending classes, seminar workshops, exams.						
Monitoring student	Class attendance		Research		Practical work		

work (enter the share in ECTS credits for each activity so that the total number of ECTS credits corresponds to the credit value of the course):	Experimental work		Report		(others)	
	Essay		Seminar	2	(others)	
	Self-study	1	Workshop		(others)	
	Project		Office hours, mid-term exams and final exam	3	(others)	
Assessment and evaluation of student work during classes and at the final exam	CONTINUOUS ASSESSMENT					
	Continuous testing indicators			Performance A_i (%)	Grade ratio k_i (%)	
	First mid-term exam			50-100	30	
	Second mid-term exam			50-100	30	
	Seminar paper			50-100	40	
	FINAL ASSESSMENT					
	Indicators checks			Performance A_i (%)	Grade ratio k_i (%)	
	Final exam (written)			50 - 100	60	
	Seminar paper			50-100	40	
	Indicators checks			Performance A_i (%)	Grade ratio k_i (%)	
	Final exam (written)			50 - 100	60	
	Seminar paper			50-100	40	
	The grade (in percentages) is formed on the basis of all indicators that describe the level of student activities according to the relation:					
	$Grade(\%) = \sum_{i=1}^N k_i A_i$					
	k_i - weighting factor for each activity, A_i - success in percentage achieved for a particular activity, N - total number of activities.					
	PERFORMANCE AND GRADE					
	Percentage		Criteria			Grade
	from 50% to 61%		basic criteria met			sufficient (2)
	from 62% to 74%		average performance with some errors			good (3)

	from 75% to 87%	<i>above-average success with minor errors</i>	very good (4)
	from 88% to 100%	<i>outstanding performance</i>	outstanding (5)
Required reading	1. Mladen Šercer, Božidar Križan, Robert Basan Konstruiranje polimernih proizvoda, Sveučilište u Zagrebu – Fakultet strojarstva i brodogradnje, 2009 2. Božidar Križan, Robert Basan, Polimerni Konstrukcijski elementi, Zigo - Rijeka, 2009. 3. Teaching materials available on Moodle platform		
Optional reading	/		
Quality monitoring to ensure the acquisition of established learning outcomes	• Records of class attendance and success in performing student obligations • Updating detailed course curricula • Supervision of teaching activities • Continuous quality control of all parameters of the teaching process in accordance with the Action Plans • Semester-based student survey in accordance with the "Ordinance on the procedure of student evaluation of teaching work at the University of Split" (UNIST, Centre for Quality Improvement). • Seminar paper (oral defend) • Mid-term exam • Written exam		
Other information	Detailed course syllabus is located within the teaching support system (MOODLE) and it is available for students and teachers of the University Department of Professional Studies. Abbreviated course syllabus (Croatian and English version) are available for public information directly on website of the University Department of Professional Studies.		