

# Syllabus

Basic data of the subject			
University/Faculty:	University of Applied Sciences in Ferizaj/ Faculty of Engineering and Informatics		
Study program:	Industrial Engineering with Informatics		
Title of the subject:	Polymer Materials		
Level:	Bachelor		
Course Status:	Elective Course		
Year of studies:	II		
Number of hours per week:	4		
Value of Credits - ECTS:	5		
Time / location:	Tuesday, 9:00-12:00		
Course lecturer:	MSc. Ganimete Heta		
Contact details:	<a href="mailto:ganimete.heta@ushaf.net">ganimete.heta@ushaf.net</a>		
<b>Course Description</b>			
	<p><i>Thermoplasts, elastomers, thermoplastic elastomers, duroplasts and naturally modified products: Polymerization, polycondensation and polyaddition reactions, networking reactions.</i></p> <p><i>Mechanical, chemical and electrical properties, Special claims processing procedures, Material Selection, Polymers Performance During Database Research</i></p>		
<b>Objectives of the course:</b>			
	<p><i>Introducing students to polymer materials used in technique and everyday life. With the structure of polymer materials and their construction. Introducing students to the most modern methods of obtaining polymer materials and their processing properties.</i></p>		
<b>Learning outcomes:</b>			
	<p><i>Upon completion of this course the student will be able to:</i></p> <ol style="list-style-type: none"> <li><i>1. To recognize and distinguish types of polymer materials,</i></li> <li><i>2. Know how to obtain polymer materials</i></li> <li><i>3. To distinguish the structure of polymer materials</i></li> <li><i>4. To distinguish the processing properties of polymer materials and the mechanical, thermal, electrical properties, etc.</i></li> </ol>		
<b>Contribution to the student load (which must correspond with learning outcomes)</b>			
Activity	Hour	Day/Week	In total
Lectures	2	15	30
Theoretical exercises / laboratory	2	15	30
Internship	-	-	-
Contacts with teacher / consultations	1	15	15
Field exercises	-	-	-
Midterm, seminars and projects.	1	2	2

Homework			
Self-learning time student (at the library or at home)	2	15	30
Final preparation for the exam	5	3	15
Time spent on evaluation (tests, quiz and final exam)	1	2	2
Projects and presentations	0.5	2	1
<b>Total</b>			<b>125hours</b>
<b>Teaching methodology:</b>			
	lectures, seminars, discussions, group work, business visits to polymer materials processing companies, etc.		
<b>Assessment methods:</b>			
	First written test score: 40% Second evaluation by written test: 40% Homework or other commitments: 15% Regular line: 5% Final exam: 80% Total: 100%		
<b>Literature</b>			
<b>Basic Literature:</b>	Fatmir Çerkini „Polymer Materials” (booklet), FSHTA- Ferizaj, 2012		
<b>Additional Literature:</b>	<ol style="list-style-type: none"> <li>1. Čatić I.: Proizvodnja polimernih tvorevina, BIBLIOTEKA POLIMERSTVO –SERIJA ZELENA, Zagreb, 2006.</li> <li>2. N.Qehaja.:Polimeret I(Ligjeratatëautorizuara), Prishtinë, 2011</li> <li>3. Fatmir Çerkini „TEKNIKA E PËRPUNIMIT TË MATERIALEVE POLIMERE” (Ligjerata të autorizuara), Ferizaj 2004</li> <li>4. Strong A.B: Plastics, materials and processing, Prentice Hall, Ohio, 2000.</li> <li>5. Teuta Çarçani „TEKNOLOGJIA KIMIKE ORGANIKE”, Tiranë 1988</li> <li>6. Ing.Miroslav Nadj„POLIMERNI MATERIJALI”, Zagreb</li> <li>7. M.Bicaj, R.Hoti, S.Jusufi.:Kimia”, gjimnazi i shkencave natyrore, gjimnazi matematikë dhe informatikë, gjimnazi I përgjithshëm, Libri Shkollor, Prishtinë, 2011</li> <li>8. Dipl.inž.Bogdan Rapajič„PRERADA PLASTIČNIH MASA EKSTRUDIRANJEM” , Beograd</li> <li>9. ENCYCLOPEDIA BRITANNICA 2003</li> <li>10. Kemijski Kombinatski Zavod „CHROMOS” -PLASTIČNE MASE -Katalog, Zagreb</li> <li>11. B. Vidakovic, Alati i prerada plasticnih masa</li> </ol>		
<b>The ratio of theory and practice</b>	Theory: 80%; Practice: 20%		

<b>Designed learning plan</b>	
<b>Week:</b>	<b>Lectures and exercises to be held</b>
<b>Week one:</b>	<i>Introduction. Polymeric materials. Separation of polymer materials. PLASTOMER. Duromeret</i>
<b>Week two:</b>	<i>Elastomers. Natural rubber, synthetic rubber. Vulcanization products. Raw materials for the production of plastic masses</i>
<b>Week three:</b>	<i>Structure of polymer materials. Construction of polymer materials</i>
<b>Week four:</b>	<i>The degree of polymerization. Molecular mass of polymers. Homopolimerët. Kopolimerët.</i>
<b>Week five:</b>	<i>Benefit of polymer materials. Polymerization. Kopolimerizimi. Polikondenzimi</i>
<b>Week six:</b>	<i>First Intermediate Assessment</i>
<b>Week seven:</b>	<i>Polymerization Products. Plastomers. Polyethylene-PE</i>
<b>Week eight:</b>	<i>Polypropylene-PP, Polyisobutylene-PIB,</i>
<b>Week nine:</b>	<i>Polystyrene-PS.</i>
<b>Week ten:</b>	<i>Polyvinyl chloride-PVC, teflon</i>
<b>Week eleven:</b>	<i>Polimetilmetakrilat-PMMA. Poliakrilnitrili-PAN. Polyoxymethylene, POM</i>
<b>Week twelve:</b>	<i>Products of polycondensation Duromeret.</i>
<b>Week thirteen:</b>	<i>Polyethylene terephthalate-PET. Polyester-PS. Polycarbonate PC.</i>
<b>Week fourteen:</b>	<i>Polyaddition products. PUR-polyurethanes. Other natural processing polymers. Polysaccharides.</i>
<b>Week fifteen:</b>	<i>Cellulose. Protein strands. Properties of natural fibers. Physical state of polymer materials. Additives to polymers.</i>

#### **Academic policies and rules of conduct**

*Set etiquette policies according to UASF -status.  
the teacher sets the criteria for regular attendance at lectures and exercises and rules of conduct such as: keeping calm in class, switching off cell phones, entering the room on time, etc*