

## SYLLABUS

Basic data of the subject			
Faculty:	Faculty of Engineering and Informatics		
Title of the subject:	Engineering Materials II		
Level:	Bachelor		
Course Status:	core		
Year of studies:	I		
Number of hours per week:	3		
Value of Credits - ECTS:	5		
Time / location:			
Course lecturer:	Mr.Sc. Fatmir Cerkini and Prof.Asoc.Dr. Milihate Aliu		
Contact details:	fatmir.çerkini@ushaf.net, milihate.aliu@ushaf.net		
<b>Course Description</b>			
	<i>This course is an introduction to the polymer and composite materials that are used in manufacturing and product design using polymer products.</i>		
<b>Objectives of the course:</b>			
	<i>The aim of this course is to provide students with knowledge of polymeric materials and composite materials used in technology and in everyday life.</i>		
<b>Expected learning outcomes:</b>			
	<p><i>After successful completion of the course, students will be able to:</i></p> <ul style="list-style-type: none"> <li>• <i>know and distinguish the types of materials and to explain the formation of composites;</i></li> <li>• <i>understand the ways of obtaining polymeric materials and composite materials;</i></li> <li>• <i>distinguish the structure of polymeric materials and clarify the layered structure of composites, processing properties of polymeric and composite materials and mechanical, thermal, electrical, characteristics. etc.</i></li> <li>• <i>evaluate the role of the use of polymeric materials and composites in technique.</i></li> </ul>		
<b>Contribution to the student load (which must correspond with learning outcomes)</b>			
<b>Activity</b>	<b>Hour</b>	<b>Dey/Week</b>	<b>In total</b>
Lectures and lab exercises	3	15	45

Practical work			
Contacts with teacher / consultations	1	7	7
Field exercises			
Kolokvium, seminars and project.	2	2	4
Homework	1	5	5
Self-learning time student (at the library or at home)	3	15	45
Final preparation for the exam	2	8	16
Time spent on evaluation (tests, quiz and final exam)	2	1	2
Projects, presentations, etc..			
<b>Total</b>			<b>124</b>
<b>Teaching methodology:</b>	<i>Lectures and exercises combined with tutorials and classroom exercises</i>		
<b>Assessment methods:</b>	<i>First assessment 30%</i> <i>Second assessment 30%</i> <i>Third assessment 30%</i> <i>Homework and other commitments 10%</i> <b>Or thorough final exam</b> <i>Final exam 100 %</i>		
<b>Literature</b>			
<b>Basic Literature:</b>	1. <i>Fatmir Çerkini, Polymers Materials, (dispensary), Faculty of Applied Sciences - Ferizaj, 2012;</i> 2. <i>Prof. Assoc. Dr. Milihate Aliu, "Composites Materials", Dispensation, 2016 (Lectures elaborated and prepared by subject professor - Authorized dispensary).</i>		
<b>Additional Literature:</b>	1. <i>Teuta Çarçani, "ORGANIC CHEMICAL TECHNOLOGY", Tirana 1988;</i> 2. <i>N. Qehaja .: Polymers I (Authorized Lectures), Prishtina, 2011;</i> 3. <i>Ing. Miroslav Nadj, "POLYMERS MATERIALS", Zagreb;</i> 4. <i>Fatmir Çerkini „PROCESSING TECHNIQUE OF THE POLYMERS MATERIALS" (Authorized Lectures), Ferizaj 2004;</i> 5. <i>Strong A.B: Plastics, materials and processing, Prentice Hall, Ohio, 2000;</i>		

	<p>6. <i>Jang, B. Z.; Advanced Polymer Composites: Principles and Applications, ASM International, Materials Park, OH, 1994.</i></p> <p>7. <i>Reinforced plastics handbook; Donald V. Rosato, Dominick V. Rosato, and John Murphy; Elsevier; 2004; page 586;</i></p> <p>8. <i>History of Composites, Tim Palucka and Bernadette Bensaude-Vincent;</i></p>
Designed learning plan	
Week:	Lectures and exercises to be held
Week one:	<i>Introduction. The materials of polymers. Separation of polymers materials. Plastomers. Duromers. Elastomers.</i>
Week two:	<i>Structure of polymeric materials. Construction of polymeric materials, degree of polymerization. Molecular mass of polymers. Homopolymers. Copolymers.</i>
Week three:	<i>Benefit of polymeric materials. Polymerization. Copolymerization. Polycondensation.</i>
Week four:	<i>Products of Polymerization. Elastomers. Polyethylene-PE. Polypropylene-PP. Polyisobutylene-PIB, Polystyrene-PS. Polyvinyl chloride-PVC, ect. First intermediate assessment. First intermediate assessment</i>
Week five:	<i>Polimetil Metakrilat-PMMA. Poliakril Nitrile-PAN. Polioksimetilen, POM</i>
Week six:	<i>Products of Polycondensation , Duromeret. Aminoplasts, phenoplasts, bakelite, polyamides-PA (perlon, nylon). Products of Polyadenylation, Tereftalat-PET polyethylene. Polyester-PS. Polycarbonate- PC.</i>
Week seven:	<i>Products of Polyadination . Polyurethanes - PUR. Other natural polymers of processing. Polysaccharides.</i>
Week eight:	<i>The Physical state of polymeric materials. Additives in polymers. Aging of polymeric materials. Second intermediate assessment</i>
Week nine:	<i>General knowledge of Composites. Matrix and amplifiers</i>
Week ten:	<i>Fibers and particles as reinforcers. Types of the connections between matrix and amplifier.</i>
Week eleven:	<i>Classification of the composites</i>
Week twelve:	<i>The composites reinforced with particle and amplifiers of dispersive. The composites reinforced with of Fibers</i>
Week thirteen:	<i>The composites laminates</i>
Week fourteen:	<i>Composites with metal matrix. Composite with ceramic matrix.</i>
Week fifteen:	<i>Composites with Polymers matrix. Use of the composites materials.</i>

<i>Third intermediate estimation</i>
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<b>Academic policies and rules of conduct</b>
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<b>Assign well-being policies in accordance with UAS-F status.</b>
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<i>The teacher sets the criteria for regular attendance at lectures and exercises and rules of etiquette such as: keeping calm in class, disconnecting cell phones, entering the hall on time, etc.</i>
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