
		UNIVERSITY OF EAST SARAJEVO					
		Faculty of Technology Zvornik					
		Study programme: Chemical Engineering and Technology					
		Cycle I		Year IV			
<b>Course title</b>		OIL AND LUBRICANT TECHNOLOGY					
<b>Department</b>		Department for Chemical Technologies – Faculty of Technology Zvornik					
Course code		Course status		Semester		ECTS	
04-2-063-8		Elective		VIII		4	
<b>Teacher</b>		Zoran Petrović, PhD, Assoc. Prof.					
<b>Teaching assistant</b>		Zoran Petrović, PhD, Assoc. Prof.					
Number of classes/ teaching workload (per week)			Individual student workload (in hours per semester)			Student workload coefficient S <sub>0</sub>	
Lectures	Auditory exercises	Laboratory exercises	Lectures	Auditory exercises	Laboratory exercises	S <sub>0</sub>	
2	0	2	30	0	30	1.00	
2*15+0*15+2*15=60 hours			(2*15*1+0*15*1+2*15*1)=60 hours				
Total course workload 60 + 60 = 60 hours per semester							
<b>Learning outcomes</b>		After finishing the course, students will be able to: <ol style="list-style-type: none"> <li>1. demonstrate and utilize the basic knowledge of tribology and technology of base oils and lubricants</li> <li>2. master material and energy balancing in the production of lubricants</li> <li>3. demonstrate and utilize skills in control and management of the lubricant mixing process</li> <li>4. master the basic test methods and product quality standards</li> <li>5. master the methods of reducing the impact lubricants on the environment</li> </ol>					
<b>Prerequisites</b>							
<b>Teaching methods</b>		Lectures, experimental exercises, student visits to refineries, seminar paper					
<b>Syllabus outline per week</b>		<ol style="list-style-type: none"> <li>1. Basic concepts of lubrication. Tribology.</li> <li>2. Classification of base oils. Base oil production processes.</li> <li>3. Conventional base oil production processes.</li> <li>4. Modern base oil production processes (hydrocracking and hydroisomerization).</li> <li>5. Synthetic base oils. Vegetable base oils.</li> <li>6. Physico-chemical characteristics of base oils and test methods.</li> <li>7. Classification of lubricants. Classifications and quality standards.</li> <li>8. Lubricant mixing. Material balance. (Mid-term test/Colloquium I)</li> <li>9. Greases for lubrication. Types of fats. Production and application.</li> <li>10. Additives for lubricants and their functions.</li> <li>11. Application of lubricants in the energy industry (mines, thermal power plants, hydroelectric power plants, wind power plants).</li> <li>12. Application of lubricants in the automotive and mechanical industry (engines, transmissions, mechanical and thermal metal processing operations).</li> <li>13. Environmental aspects of the application of lubricants. Biodegradable lubricants. Handling of lubricants.</li> <li>14. Re-refining of used lubricants to base oils.</li> <li>15. Recycling of used lubricants into fuel. Mid-term test/Colloquium II)</li> </ol>					
Obligatory reading							
Author		Title, publisher		Year	Pages		
Cerić, E.		Tehnologija prerade plastičnih masa, Tehnička knjiga, Beograd		2012	359-404		
Petrović, Z., Dugić, P., Aleksić, V.		Dodaci polimerima, IHTM – ITR, Beograd		1997	15-158		
Grupa autora		Maziva i podmazivanje, JUGOMA, Zagreb		1769	55-78, 153-198, 211-248, 327-343, 521-543		
Additional reading							
Author		Title, publisher		Year	Pages		
Sokolović, M.S.		Karakterisanje polimera, Tehnološko – metalurški fakultet Beograd		2007			
Grupa autora		Maziva i podmazivanje, JUGOMA, Zagreb		2005	87-152, 249-325, 361-		

			400, 467-515
<b>Obligations, assessment methods and grading system</b>	<b>Type of student evaluation</b>	<b>Grade points</b>	<b>Percentage</b>
	Pre-exam obligations		
	Attendance	6	6 %
	Mid-term test/Colloquium 1	20	20 %
	Mid-term test/Colloquium 2	24	24 %
	Laboratory exercises	10	10 %
	Seminar paper	10	10 %
	Final examination		
	Final examination (oral)	30	30 %
Total	100	100 %	
<b>Web page</b>	www.tfzv.ues.rs.ba		
<b>Date</b>	2023		