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|---|-------------------|---------------------|-----------------------|
| <b>Study program:</b> Master academic studies Environmental Risk Management (MASERM)  |                   |                     |                       |
| <b>Type and level of studies:</b> Master academic studies, II level of studies  |                   |                     |                       |
| <b>Subject name:</b> <a href="#">Pollutants from Industrial Processes</a>   |                   | <b>Subject code</b> | 6U1PIP                |
| <b>Professor:</b> <a href="#">dr Dragoslav Budimirović, assistant professor</a>   |                   |                     |                       |
| <b>Subject status:</b> Elective   |                   |                     |                       |
| <b>Number of ECTS:</b> 6  |                   |                     |                       |
| <b>Condition:</b> none  |                   |                     |                       |
| <b>Subject goal</b><br>Familiarizing students with regulations in the area of influence of dangerous and harmful materials in industrial processes, with the importance of management in the protection of labour and environment and the effects of emitted pollutants.  |                   |                     |                       |
| <b>Subject outcomes</b><br>Students will acquire the necessary knowledge in the area of impact, consequences and importance of the pollutants during industrial processes and legal regulations to protect labor and the environment.   |                   |                     |                       |
| <b>Subject content</b><br><i>Theoretical classes</i><br>The concept of hazardous substances. The classification of hazardous substances. REACH Regulation. Management of chemicals in the Republic of Serbia. National profile for chemicals management. Ignition (explosion) and the burning of the matter by the action of water, oxygen from air and other substances. Chemical processes that create conditions for the emergence of fire and explosion when working with harmful and hazardous substances. International regulations on the transport of dangerous substances. Working with harmful and hazardous substances. Relative risk assessment (categorization of toxicity, flammability and reactivity). Safety precautions. Accidents caused by dangerous substances. Seveso Directive. Management Seveso installations. Physico-chemical properties of substances of importance for the transport and transformation in the environment. Transport and reactions of pollutants in air, water and soil. Examples of the behavior of substances in the water, air and soil.<br><i>Practical classes</i> |                   |                     |                       |
| <b>Literature</b><br>1. O. Stojanović, N. Stojanović, Dj. Kosanović, Hemijsko tehnološki priručnik 4: Štetne i opasne materije, IRO RAD, Beograd 1984.<br>2. S. Rajaški, D. Petrović, Priručnik za približno izračunavanje osobina gasova i tečnosti, Minerva, Subotica-Beograd, 1974.<br>3. Petrović, V. N., Marković, D.A.: Transformacije i transport supstanci u životnoj sredini (interaktivna skripta), Fakultet za primenjenu ekologiju Futura, Univerzitet Singidunum, Beograd, 2013.<br>4. S.E Manahan, Environmental Chemistry, CRC Press LLC, Boca Raton, 2000.<br>5. S.E Manahan, Industrial Ecology: Environmental Chemistry and Hazardous Waste, CRC Press LLC, Boca Raton, 1999.   |                   |                     |                       |
| <b>Number of active teaching classes</b>  |                   |                     | Other classes         |
| Lectures: 2(30)   | Practices : 2(30) | Other class types:  | Study research paper: |
| <b>Teaching methods</b><br>Lectures with Power Point presentations, computational practices, seminar paper, written exam.   |                   |                     |                       |
| <b>Knowledge evaluation (maximum number of points is 100)</b>   |                   |                     |                       |
| <b>Pre-exam obligations</b>   | <b>points</b>     | Final exam          | <i>points</i>         |
| Activity during lectures  | <b>10</b>         | Written exam        | 50                    |
| Practical classes   | <b>20</b>         |                     |                       |
| Seminar paper   | <b>20</b>         | .....               |                       |