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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Science and Mathematics |
| **GENERAL INFORMATION** |
| Study program  | **Applied chemistry** |
| Study Module (if applicable) | Applied chemistry |
| Course title | H-245 Industrial chemistry II |
| Level of study | ☐Bachelor X Master’s ☐ Doctoral |
| Type of course | X Obligatory ☐ Elective |
| Semester  |  ☐ Autumn XSpring |
| Year of study  | First year of Master’s study |
| Number of ECTS allocated | 7 |
| Name of lecturer/lecturers | Prof. dr Milena N. Miljkovic  |
| Teaching mode |  XLectures ☐Group tutorials ☐ Individual tutorialsX Laboratory work ☐ Project work X Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Introduction of students with processes of industrial production of chosen inorganic and organic compounds, as well as side-by-products, which could be made during these technologies. Training of students for the application of knowledge from the area of the production of inorganic and organic compounds and processing and reuse of side products and the creation of new technological processes. Achievement of concrete knowledge through laboratory exercises about the practical application of studied industrial important compounds.*  |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Lectures**1. **Technology of sulphuric acid;**
2. **Technology of bound nitrogen;**
3. **Technology of nitric acid;**
4. **Technology of nitrogenous fertilizers;**
5. **Technology of phosphorous fertilizers;**
6. **Technology of phosphoric acid;**
7. **Technology of calcined soda according to Solvay ammonium procedure;**
8. **Electrochemical procedures of the production of caustic soda;**
9. **Electrochemical procedure of production of hydrogen;**
10. **Production of hydrochloric acid;**
11. **Technology of persulfate and hydrogen peroxide;**
12. **Chemical technology of solid fuel;**
13. **Chemical technology of gaseous and liquid fuels;**
14. **Technology of the production-synthesis of important organic compounds;**
15. **Introduction into technology of macromolecules;**

**Practical teaching: Exercises**1. **Application of hydrogen-peroxide for bleaching of various materials;**
2. **Application of sodium-hypochlorite for bleaching of various materials;**
3. **Processing of cotton fabrics against creasing;**
4. **Breeding of cellulose fibers using chemical technology (mercerising);**
5. **Breeding of macromolecules using dying process;**
6. **Determination of critical micelle concentration using sodium-dodecylsulfate by measuring electrical conductivity;**
7. **Production of soap;**
8. **Hydrolysis of cellulose;**
9. **Synthesis of polystyrene.**

**Field work****Tour of the chemical industry.** |
| **LANGUAGE OF INSTRUCTION** |
| XSerbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **5** | **Written examination** | **51** |
| **Practical teaching** | **24** | **Oral examination** | **/** |
| **Teaching colloquia** | **20** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |