|  |
| --- |
|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  |  |
| **GENERAL INFORMATION** |
| Study program  | **Chemistry** |
| Study Module (if applicable) |  |
| Course title | Corrosion and protection of metals |
| Level of study | [x] Bachelor [ ]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [ ]  Autumn [x] Spring |
| Year of study  | Third |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | Aleksandar Bojic |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [x] Laboratory work [ ]  Project work [x]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Introducing students with the basic principles of corrosion process, corrosion mechanisms, forms and types of corrosion and methods for inhibition and prevention of corrosion. Introducing students with the basic principles of galvanic protection of metals, the acquisition of practical knowledge about the procedures for applying metal coatings and coating quality testing.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Corrosion principles. Thermodynamics of electrochemical corrosion of metals. Kinetics of electrochemical corrosion of metals. Passivation of metals. Chemical corrosion of metals: corrosion in non-electrolytes. Types of corrosion. Inhibition of the corrosion. The principles of galvanic protection of metals. The cathodic and anodic processes, composition of galvanic baths, metal coating, distribution of current and metal sediment on cathode,** **adhesion and cohesion of the coating, decorative coating properties. Preparation of metal surfaces: mechanical preparation, chemical treatment, electrochemical preparation; Devices for galvanic processes: power sources, baths and carriers for parts. Galvanic coating: zinc, copper, chromium, nickel, brass, tin, cadmium, lead, precious metals, alloy coatings, coatings on aluminum and on its alloys. Analysis of galvanic baths, testing the quality of coatings.** |
| **LANGUAGE OF INSTRUCTION** |
| [x] Serbian (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** | **40** |
| **Practical teaching** | **25** | **Oral examination** |  |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |