|  |
| --- |
|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Technology Leskovac |
| **GENERAL INFORMATION** |
| Study program  | **Technological Engineering** |
| Study Module (if applicable) |  |
| Course title | Advances in Pharmaceutical Biotechnology |
| Level of study | [ ] Bachelor [ ]  Master’s [x]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [x] Spring |
| Year of study  | 2nd  |
| Number of ECTS allocated | 8 |
| Name of lecturer/lecturers | Miodrag Lazić, Ivana Karabegović |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [x]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *To provide students with knowledge of basic bio technological procedures and techniques for the production of pharmaceutical products, diagnostic agents and gene therapeutics.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Regulation of biopharmaceutical processes. Product development process. Cell types that are used for the production of biopharmaceuticals and their methods of cultivation. Biopharmaceutics of animal, plant and microbial origin. The types of substrates and reactors used for the production of biopharmaceuticals. Genetic engineering in the production of biopharmaceuticals. The production of recombinant proteins. Gene therapy. Industrial production of antibiotics. Biotechnological production of Vitamins, Antibodies, Vaccines and Cytokines. The haematopoietic growth factors. Insulin and other hormones. Blood products and other therapeutic enzymes. Plant-based biopharmaceuticals.** |
| **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** | **10** | **Written examination** |  |
| **Practical teaching** |  | **Oral examination** | **60** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |