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| **Study program** Applied chemistry with the management basics |
| **Course title** Industrial processes (H266C) |
| **Name of lecturer/lecturers** Marjan S. Ranđelović |
| **Type of course** Obligatory |
| **Number of ECTS allocated** 7 |
| **Course objectives**Acquisition of advanced knowledge and skills related to the methodology of leading and designing technological processes and devices of the chemical process industry. |
| **Course outcomes**After completing the theoretical and practical part of this course, students are able to:* acquire knowledge necessary for understanding, monitoring and managing industrial processes;
* expand their knowledge acquired within the framework of previous industrial chemistry courses;
* master the skills for independent collection of relevant information about a process and the knowledge that ensures the successful design of technological processes.
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| **SYLLABUS***Lectures*Introduction to industrial processes (chemical-technological processes); Structure and characteristics of industrial (chemical-technological) processes; Application of thermodynamics and kinetics in HT processes; Projecting industrial processes; Flow chart development; Process optimization and intensification; Models of the chemical-technological process; Process balancing; Process simulation and computer application in process design; Process development from laboratory to industry; Semi-industrial research; Increasing the scale of the process; Detailed process design; Project management; Plant safety.*Laboratory work*Computational exercises; Design and simulation of the process on the computer using one of the software packages (CHEMCAD, ASPEN, SuperPro, Desing II). |
| **References**1. R. Šećerov Sokolović, Projektovanje tehnoloških procesa, Tehnološki fakultet Novi Sad, 2000.
2. F. Štef, Ž. Olujić, Projektovanje procesnih postrojenja, Kemija u industriji, Zagreb, 1988.
3. W. D. Seider, J.D. Seader, D. R. Lewin, Product & Process Design Principles, Synthesis, Analysis, and Evaluation, 2nd ed., John Wiley&Sons, Inc., New York [etc.], 2004.
4. https://www.winsim.com/
5. D. Vitorović, Hemijska tehnologija, Naučna knjiga, 1980.
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| **Active teaching classes** | **Lectures** 60 | **Laboratory work** 30 |
| **Teaching mode**Theoretical-interactive teaching with visual demonstrations using videos, individual laboratory exercises, computational and theoretical exercises, seminars. |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** |
| **Pre exam duties** | **Points** | **Final exam**  | **Points** |
| Activity during lectures | 5 | Written examination | 30 |
| Practical teaching | 5 | Oral examination | 30 |
| Teaching colloquia | 20 |  |  |
| Seminar | 10 |  |  |