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| **Study program** Applied chemistry with the management basics | | | | |
| **Course title** Applied organic chemistry (H261C) | | | | |
| **Name of lecturer/lecturers** Goran M. Petrović | | | | |
| **Type of course** Elective | | | | |
| **Number of ECTS allocated** 7 | | | | |
| **Course objectives**  Acquiring knowledge about industrially important organic compounds and reactions.  Training for work in various branches of modern industrial organic chemistry.  Application of acquired knowledge in the design of new modern materials and technologies. | | | | |
| **Course outcomes**  After successful completion of this course, the student is able to:   * list the possibilities of applying organic compounds in the modern environment; * demonstrate acquired knowledge and understanding of basic facts, concepts, principles and theories of solving problems related to obtaining, isolating, purifying industrially important organics compounds; * apply acquired knowledge in the development of new organic compounds; * apply the principles of good laboratory practice in solving given practical problems; * formulate critical conclusions based on data collection and their interpretation and write reports on possibilities of development and application of organic compounds in the development of new materials and production processes; * work in the production processes of obtaining organic compounds. | | | | |
| **SYLLABUS**  *Lectures*  Introduction. Oil as a raw material. Oil refining processes. Raw materials for the industry of organic compounds – hydrocarbons. Raw materials for the industry of organic compounds - oxygen compounds. Raw materials for the industry of polymeric organic compounds. Pharmaceutical industrial chemistry. Industrially important chemical reactions: alkylation, amination, condensation, addition. Industrially important chemical reactions: dehydration, dehydrogenation, esterification, ethynylation, fermentation, halogenation. Industrially important chemical reactions: hydration, hydrolysis, hydroformylation, hydrogenation, nitration, oxidation. Seminar paper.  *Laboratory work*  Introductory class. Familiarizing students with the exercise program, behavior in the laboratory, their tasks and obligations. Synthesis of caprolactam. Synthesis of polyamide. Synthesis of indigo. Professional practice in appropriate industrial facilities. | | | | |
| **References**   1. Ž. Čeković, Organske sinteze: reakcije i metode, Zavod za udžbenike i nastavna sredstva, Beograd, 2006. 2. K.P.C. Vollhardt, N.E. Schore, Organska hemija, Ed. Haydigraf, prevod B. Šolaja, Beograd, 1996. 3. P.J. Chenier, Survey of Industrial Chemistry, Kluwer Academis, New York, 2002. | | | | |
| **Active teaching classes** | **Lectures** 45 | | **Laboratory work** 30 | |
| **Teaching mode**  Lectures, consultations, colloquia, seminar papers, laboratory exercises. | | | | |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** | | | | |
| **Pre exam duties** | **Points** | **Final exam** | | **Points** |
| Activity during lectures | 5 | Written examination | | 35 |
| Practical teaching | 10 | Oral examination | |  |
| Teaching colloquia | 40 |  | |  |
| Seminar | 10 |  | |  |