

Karta przedmiotu / Course description

Informacje ogólne o przedmiocie / General information about the course	
1. Kierunek studiów / Major of study: Pharmacy	2. Poziom kształcenia / Study level: uniform master's studies 3. Forma studiów / Form of study: Full-time
4. Rok / Year: III	5. Semestr / Semester: V
6. Nazwa przedmiotu / Course name: Synthesis and technology of drug	
7. Status przedmiotu / Course status: Obligatory	
8. Jednostka realizująca przedmiot, adres, e-mail: Name of Department, mailing address, e-mail: The Medical University of Silesia in Katowice, Faculty of Pharmaceutical Sciences in Sosnowiec, Department of Drug Technology, Jednosci 8, 41-200 Sosnowiec, technologia@sum.edu.pl	
9. Treści programowe przedmiotu Course contents: Preparing students for cooperation with technologists in pharmaceutical factories in the field of quality system management, designing new drugs, as well as optimization of individual chemical processes and physical operations.	
10. liczba godzin z przedmiotu / Number of hours for the course	70
11. liczba punktów ECTS dla przedmiotu / Number of ECTS points for the course	5
12. Formy i tematy zajęć / Forms and topics of classes	Liczba godzin Number of hours
<p>12.1. Lectures</p> <p>12.2. Seminars</p> <ol style="list-style-type: none"> Organizational lesson Basic laboratory activities (weighing, mounting the apparatus for synthesis, titration, vacuum evaporator, determination of the melting point). Esterification of 4-nitrobenzoic acid to ethyl 4-nitrobenzoate and isolation of crude ethyl 4-nitrobenzoate from the mixture post-reaction (Part A task 1 & 2) Purification of ethyl 4-nitrobenzoate by the use of activated carbon (Part A task 3) Reduction of ethyl 4-nitrobenzoate to ethyl 4-aminobenzoate using iron in acetic acid and Separation of crude ethyl 4-aminobenzoate from the mixture post-reaction (Part B task 1 & 2) Cleaning of ethyl 4-aminobenzoate by crystallization (Part B task 3) Quality control of the obtained ethyl 4-aminobenzoate (Part C) <p>12.3 Laboratory classes</p> <ol style="list-style-type: none"> Organizational seminars Getting acquainted with the principles of preparing the balance sheet material technological process. Execution of part of the balance sheet material for given numerical data. Getting acquainted with the principles of drawing up a schematic-block diagram of an exemplary technological process. Preparation of a schematic block diagram for a given description of the technological process. 	

<p>5. Getting acquainted with the principles of drawing up an apparatus diagram of an exemplary technological process. Preparation of an apparatus diagram for a given description of the technological process.</p> <p>6. Solving tasks concerning unit chemical processes in the production of acetylsalicylic acid and sulfonamides.</p> <p>7. Solving tasks related to the processes of oxidation, reduction, nitration, sulfonation, and chlorination.</p> <p>8. Solving tasks related to exemplary processes of obtaining intermediates for organic and inorganic synthesis. Solving tasks related to the operation of crystallization and extraction as well as the processes of neutralization and preparation of other organic intermediates.</p> <p>9. Final test.</p>	
<p>13. Literatura / Readings</p> <p>Richard B. Silverman, Mark W. Holladay: The Organic Chemistry of Drug Design and Drug Action, 3rd edition, Elsevier, 2014</p> <p>Graham Patrick: An Introduction to Drug Synthesis, Oxford 2015</p> <p>Jie Jack Li, Douglas S. Johnson: Innovative Drug Synthesis, Wiley 2015</p> <p>Lednicer Daniel: Organic Chemistry of Drug Synthesis, Wiley 2007</p>	
<p>14. Kryteria oceny – szczegóły / Detail evaluation criteria</p> <p>Zgodnie z zaleceniami organów kontrolujących / In accordance with the recommendations of the inspection bodies</p> <p>Zaliczenie przedmiotu - student osiągnął zakładane efekty uczenia się / Completion of the course – student has achieved the assumed learning outcomes</p> <p>Szczegółowe kryteria zaliczenia i oceny z przedmiotu są zamieszczone w regulaminie przedmiotu / Detail criteria for completion and evaluation of the course are specified in the course regulations</p>	