GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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|---|---|---|---|
| Subject name and code | Synthesis Methods of Organic Compounds, PG_00048898 | | |
| Field of study | Chemistry | | |
| Date of commencement of studies | October 2021 | Academic year of realisation of subject | 2024/2025 |
| Education level | first-cycle studies | Subject group | Obligatory subject group in the field of study<br>Subject group related to scientific research in the field of study |
| Mode of study | Full-time studies | Mode of delivery | at the university |
| Year of study | 4 | Language of instruction | Polish |
| Semester of study | 7 | ECTS credits | 5.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Department of Organic Chemistry -> Faculty of Chemistry | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. inż. Dariusz Witt | |
| | Teachers | | |

**Lesson types and methods of instruction**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 15.0 | 15.0 | 45.0 | 0.0 | 0.0 | 75 |

E-learning hours included: 0.0

**Learning activity and number of study hours**

| Learning activity | Participation in didactic classes included in study plan | Participation in consultation hours | Self-study | SUM |
|---|---|---|---|---|
| Number of study hours | 75 | 10.0 | 40.0 | 125 |

**Subject objectives**

Student is able to develop new method of synthesis for organic compounds. Student is able to obtain desired compound by experimental procedure.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K6_U08] is capable to design and carry out the experiment which is necessary to confirm a given hypothesis and sees wider context, often beyond-technical, of the analysed phenomena | The organic synthesis is designed by student based on the compatibility of protective groups. | [SU1] Assessment of task fulfilment<br>[SU4] Assessment of ability to use methods and tools |
| [K6_U06] can analyze the functioning of equipment, apparatus and technology lines used in laboratories and chemical industry, and can recognize and propose methods to solve the simple engineering tasks which he can meet as an Engineer and select and use routine methods, chemical apparatus and tools to solve practical engineering tasks, including also technological processes; can himself/herself read and make technical drawings using CAD software | Multi steps synthesis is developed by student | [SU1] Assessment of task fulfilment<br>[SU2] Assessment of ability to analyse information<br>[SU3] Assessment of ability to use knowledge gained from the subject |

**Subject contents**

The strategy of organic synthesis
Transformations of functional groups
Protective groups
Synthetic methods of carbon skeleton formation
Synthesis of multifunctional organic compounds
Synthesis of heterocyclic compounds

**Prerequisites and co-requisites**

The knowledge of organic chemistry basis, structural formulas, identification of acids and bases, nucleophiles and
electrophiles, delocalized orbitals.

**Assessment methods and criteria**

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| 3 colocphiums | 60.0% | 100.0% |

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| Recommended reading | Basic literature | E.J. Corey, X-M. Cheng "The Logic of Chemical Synthesis" J.Wiley&Sons, New York 1989<br><br>J. Fuhrhop, G. Penzil "Organic Synthesis" VCH 1994<br><br>S. Warren "Organic Synthesis, the disconnection approach" J.Wiley&Sons 1993<br><br>H.O. House "Nowoczesne reakcje syntezy organicznej" PWN 1979 |
| | Supplementary literature | not applicable |
| | eResources addresses | Adresy na platformie eNauczanie: |
| Example issues/ example questions/ tasks being completed | Based on the provided starting materials develop the synthesis of target molecule. | |
| Work placement | Not applicable | |