University of Gdańsk

Subject card

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|---|---|---|---|
| Subject name and code | The Basics of Organic Chemistry for Oceanographers - lecture, PG_00205320 | | |
| Field of study | Oceanography | | |
| Date of commencement of studies | October 2027 | Academic year of realisation of subject | 2028/2029 |
| Education level | Bachelor's studies | Subject group | Obligatory subject group in the field of study |
| Mode of study | full-time studies | Mode of delivery | at the university |
| Year of study | 2 | Language of instruction | Polish |
| Semester of study | 4 | ECTS credits | 1.0 |
| Learning profile | academic | Assessment form | credit |
| Conducting unit | Laboratory of Toxic Substances Transformation -> Department of Chemical Oceanography and Marine Geology -> Faculty of Oceanography and Geography -> Rector | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr hab. inż. Marta Staniszewska, prof. UG | |
| | Teachers | | |

**Lesson types**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15 |

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 | 15 | 1.0 | 9.0 | 25 |

**Subject objectives**

To familiarize the student with basic knowledge in the field of organic chemistry.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [OCEANL3-W01] has an advanced knowledge and understanding of the terminology used in oceanography and related exact and natural sciences (in Polish and a selected foreign language) | knows and understands specialized terminology related to organic chemistry | [SW4] test/exam - oral or written |
| [OCEANL3-U01] is able to use the current scientific terminology in the field of oceanography in various forms of expression | is able to use current terminology in the field of organic chemistry | [SU4] test/exam - oral or written |

**Subject contents**

A.1 Structure of the carbon atom, hybridization of the carbon atom, chemical bonds in organic compounds, intermolecular interactions in organic compounds.A.2 Classification of organic compounds. Structure, nomenclature, properties, origin, homologous series, isomerism of basic groups of organic compounds: carbon and hydrogen compounds: hydrocarbons; hydrocarbon derivatives: compounds containing oxygen, halogen, others: compounds containing nitrogen, multifunctional compounds. Concepts: saturated/ unsaturated, acyclic/cyclic, non-aromatic/aromatic compounds.A.3 The importance of selected compounds and/or organic groups for the environment, including: hydrocarbons (benzene and its derivatives, crude oil, polycyclic aromatic compounds), volatile organohalogen compounds (trihalomethanes, freons, halons), organometallic compounds.A.4 Cycle of selected organic compounds in the marine environment (atmosphere, water, sediment, organisms). Environmental factors influencing the distribution of selected organic compounds in the sea.

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="3"></td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>written test</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">1. Morrison T.R., Boyd N.R., Organic Chemistry, PWN Warsaw 1994.2. Mastalerz P., Textbook of organic chemistry, Wydawnictwo Chemiczne, Wrocław 1996.3. Kupryszewski G., Introduction to organic chemistry, PWN, 1979, Warsaw</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">-</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">Ile wiązań może maksymalnie utworzyć atom węgla ? Wskaż wiązania kowalencyjne, kowalencyjne-spolaryzowane, jonowe w związkach organicznych. Dlaczego alkohole ulegają asocjacji ? Co to są węglowodory pirogenne, a co to petrogenne? Podaj źródła ropy naftowej w morzu. Co to są klatraty metanu. Zdefiniuj węglowodory nasycone, nienasycone, cykliczne, acykliczne, aromatyczne. Jak budowa związku, obecność grup funkcyjnych wpływają na właściwości głównych grup związków organicznych. Jak zmienią się właściwości alkoholi w zależności od długości łańcucha. Wyjaśnij pojęcie hydrofobowy i hydrofilowy - podaj przykłady związków. Zdefiniuj pojęcie polimer i tworzywo sztuczne. Zagrożenie dla środowiska morskiego odpadami z tworzyw sztucznych.</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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