University of Gdańsk

Subject card

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Subject name and code | Food additives, PG_00082061 | | | | | | |
| Field of study | Chemistry | | | | | | |
| Date of commencement of studies | October 2024 | | Academic year of realisation of subject | 2026/2027 | | | |
| 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 | 3 | | Language of instruction | Polish | | | |
| Semester of study | 5 | | ECTS credits | 1.0 | | | |
| Learning profile | academic | | Assessment form | credit | | | |
| Conducting unit | Laboratory of Biological Inorganic Chemistry -> Department of General and Inorganic Chemistry -> Faculty of Chemistry -> Rector | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr hab. Joanna Makowska | | | | | |
| | 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 | 2.0 | 8.0 | 25 |

**Subject objectives**

- Providing students with the latest specialist knowledge in the field of EU law regarding additives, processing aids and the conditions of their use;
- To familiarize students with the division of food additives and the impact of these additives on the human body.
- To familiarize students with the basic methods of obtaining GMOs and to explain the role of genetically modified organisms in the human economy.

Learning outcomes

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [CHEML3_W03] Explains the relationship between the structure of matter and its observed properties. | Student correctly argues his/her conclusions in the field of chemistry in speech and writing, interprets and analyzes related information with the basic chemical laws concerning the structure of matter. | [SW1] oral statement/ conversation/discussion |
| [CHEML3_U03] Selects the appropriate equipment and laboratory apparatus for conducting uncomplicated chemical experiments. | - Student is very careful when using laboratory equipment and working with chemical reagents.<br>- Student is able to classify equipment based on its properties and applications.<br>- Student is able to optimize the choice of equipment, taking into account the parameters of the experiment.<br>- Student knows how to predict the results of experiments based on input data | [SU6] demonstration of practical skills |
| [CHEML3_W05] Has basic knowledge of the chemical specialisation studied. | - Students correctly argue their conclusions in chemistry, interpret and analyze related information with basic chemical and economic laws.<br>- By reading scientific texts, student learns to analyze and synthesize information, extract key concepts and understand complex issues. | [SW1] oral statement/ conversation/discussion |
| [CHEML3_K03] Establishes priorities in the right way for the implementation of tasks specified by herself/himself and/or by others. | - Student is critical in expressing opinions and remains open to the opinion of co-discussants<br>- Student can define a clear goal or task that he wants to achieve.<br>- Student identifies the stages, operations, and devices involved in the experiment | [SK2] presentation/project/paper/ report |
| [CHEML3_W04] Characterises the basic methods of chemical compound analysis. | - Student can briefly characterize the assumptions of various analytical techniques<br>- Student can describe the principles of operation of these techniques, their applications and limitations.<br>- Student can discuss sample preparation procedures and interpretation of results. | [SW4] test/exam - oral or written |
| [CHEML3_U09] Is able to learn independently. | Student independently uses literature databases and critically selects source texts on a given topic - the student reads with comprehension, analyzes and evaluates simple scientific texts | [SU3] text preparation/written work |
| [CHEML3_K02] Works individually demonstrating initiative and independence of activity and cooperates in a team fulfilling various roles in it. | - Student prepares written assignments in various fields of chemistry using the acquired knowledge<br>- Student is aware of the need for critical analysis of his/her own work<br>- Student appreciates the need to be able to work in a team in accordance with his/her role in it (group leader/group member) | [SK2] presentation/project/paper/ report |
| [CHEML3_U08] Presents in an understandable way the basic facts about chemistry using a scientific language typical of chemical sciences. | - Student prepares written or oral studies in various fields of chemistry, using the acquired knowledge and skills as well as various sources of scientific information. | [SU1] oral statement/conversation/ discussion |

<table>
<tr><td>Subject contents</td><td>A. Issues of the lecture:<br><br>Basic legal regulations concerning substances added to food;<br><br>Division of food additives in commercial food products;<br><br>Possibilities and controversies in the use of chemical compounds in food;<br><br>Food enrichment purposes; GMO- definitions, legal regulations and goals.<br><br>GMO food.<br><br>Labeling of GMO food.<br><br>Activities of non-governmental organizations in the field of modified food.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>• Participation and obtaining credit in the following subjects:<br><br>1. Organic chemistry 2. Inorganic chemistry 3. Basics of human nutrition<br><br>• Genetics (from the high school program),<br>• biochemistry (from the high school program),<br>• microbiology (from the high school program)</td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>a positive note of the written test consisting of 15-20 test questions and open questions covering the issues listed in the program content of the lecture</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>• Maciej Taczanowski - Food law in terms of Poland's membership in the European Union 2009<br>• Zdzisław Sikorski - Food Chemistry, Volume 3, Scientific and Technical Publishing House, December 2009<br>• Jan Gawęcki, Tomasz Roszkowski - Human nutrition and public health vol. 3 Ed. PWN, 2012<br>• Wawrzyniec Kofta - Basics of genetic engineering, 1999</td></tr><tr><td>Supplementary literature</td><td>Selected scientific publications in the field of the discussed subject:<br><br>1. Márcio Carocho i inni, Adding Molecules to Food, Pros and Cons: A Review on Synthetic and Natural Food Additives, Comprehensive Reviews in Food Science and Food Safety, 13 (4), 2014, s. 377399<br><br>2. A. Witczak, Z. Sikorski "Harmful substances in food. Origin, action, health hazards." PWN Scientific Publishing House, 2020</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>- system of classification of substances added to food.<br><br>- issues and advisability of using chemical and natural compounds in food.<br><br>- main legal regulations regarding additives in food.<br><br>- basic threats and benefits for the human body resulting from the presence of additional substances in food.<br><br>- in vitro recombinant DNA methods used to modify organisms</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>

Document generated electronically. Does not require a seal or signature.