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| Course title: | Gasotransmitters in living organisms |
| Course title in Polish: | Gazotransmitery w organizmach żywych |
| Course for discipline: | biological sciences, agriculture and horticulture |

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| Semester: | 7 | Status of course: | faculty | Language: | english |
| Academic year: | | Catalog number: | | | |

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| Coordinator of course: | dr hab. Urszula Krasuska, prof. SGGW |
| Lecturer of course: | dr hab. Urszula Krasuska, prof. SGGW |
| Executing unit: | Institut of Biologu, Plant Physiology Department |
| Ordering unit: | Doctoral School SGGW |
| Assumptions, goals and description of the course: | The aim of the course is to present the mode of action of gasotransmitters in the living organisms. The function of various gaseous compounds and their cellular cross-talk will be characterised. The toxicity of such gasotransmitters as hydrogen cyanide, hydrogen sulphide and nitric oxide will be discussed. The series of lecture-experimental meetings will include: characterization of basic gasotransmitters and their involvement on metabolism, including the participation in cellular signal transduction. Metabolism of gasotransmitters will be presented. The functioning of cells depending on the concentration of gasotransmitters will be discussed. The mechanisms of repair and detoxification in animal and plant cells will be described. Experiment: analysis of the level of chosen gasotransmitter in the experimental material. |
| Didactic form, number of hours: | exercises, 10 h |
| Teaching methods: | Presentation, discussion conducted in subgroups, lecture using audiovisual techniques |
| Limit of people in the group: | 10 |

Learning outcomes

| KNOWLEDGE - the graduate knows and understands: | SKILLS - the graduate is able to: | COMPETENCES - the graduate is ready to: |
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| To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues | Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline | Critically evaluate the achievements in the field/discipline represented |
| Major general development trends in the field/discipline | | Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect |
| | | Support the ethos of scientific circles and conduct independent research |
| The method of verification of learning outcomes: | presentation of a selected topic | |
| Form of documentation of achieved learning outcomes: | student's name worksheet | |
| Elements and weights of the final grade: | presentation of the selected topic 100% | |
| Place of the course: | seminar room, laboratory room | |

Basic and supplementary literature

Current publications on the topic from reputable journals with a high impact factor.

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| Comments: | |
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| Estimated number of hours of work of the doctoral student necessary to achieve the assumed learning outcomes: | 10 |
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| Learning outcomes reference to the second degree characteristics of the National Qualification Framework (level 8) covering doctoral competences: | | |
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| Symbol: | Learning outcomes: | 8 level NQF |
| SD1_KW01 | To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues | P8S_WG |
| SD1_KW02 | Major general development trends in the field/discipline | P8S_WG |
| SD1_KU05 | Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline | P8S_UW |
| SD1_KK01 | Critically evaluate the achievements in the field/discipline represented | P8S_KK |
| SD1_KK03 | Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect | P8S_KK |
| SD1_KK08 | Support the ethos of scientific circles and conduct independent research | P8S_KR |