| Course title: | | | | |
|---|-------------------------|---------------------|--|--|
| Environmental monitoring and protection | | | | |
| Monitoring i ochrona środowiska | | | | |
| Field of study: | | | | |
| Type of study: | The level of education: | Education profile: | | |
| full-time studies | first-cycle studies | academic | | |
| Type of subject: | Semester: | Course language: | | |
| optional | VI | English | | |
| Course type: | Number of hours: | ECTS Credit points: | | |
| lecture, tutorials | 30L, 30T | 7 | | |

SYLLABUS

COURSE CONTENT

| Form of classes - lectures | |
|---|---|
| Programme, structure and fundamentals of the State Environmental Monitoring | |
| Programme | |
| Definition, objectives, tasks of monitoring in environmental subsystems | |
| Current legislations with respect to environmental monitoring | |
| The directions of studies in the environmental biomonitoring | |
| Discussion and presentation of students | |
| Origin and types of pollutants in selected environmental elements | |
| Biological processes applied in the treatment of wastewater | |
| The removal of organic and biogenic pollutants from wastewater | |
| Protection of polluted sediments | |
| Protection of polluted soils | 2 |
| Protection of polluted air | |
| Discussion and presentation of students | 1 |
| Form of classes - tutorials | |
| Computer laboratory safety training | 1 |
| Introduction to the rules of existing selected data bases and networks | 2 |
| Analysis of monitoring data coming from the selected monitoring station | 7 |
| Interpretation of results of the pollution state | 3 |
| Preparation of laboratory work report | 2 |
| Examples of environmental protection technologies | 8 |
| Group discussion on a selected topic | |
| Presentation on a selected topic | 4 |
| Course summary | |

COURSE STUDY METHODS

| 1. blackboard | |
|----------------------------|--|
| 2. multimedia presentation | |

3. monitoring data coming from the selected monitoring network station

METHODS OF ASSESMENT (F - formative; S - summative)

- **F1.** activity in classes
- **F2.** evaluation of laboratory work and preparation of laboratory report
- **S1.** Presentation

STUDENT WORKLOAD

| Form of activity | Workload (hours) |
|--------------------------------------|------------------|
| Participation in lectures | 29 h |
| Participation in classes | - |
| Laboratory | 30 h |
| Participation in project classes | - |
| Participation in seminar | - |
| Preparation course on e-learning | - |
| Test | - |
| Entrance test for laboratory classes | - |
| Project's defence | 1 h |
| Exam | - |
| Consultation hours | 20 h |
| | |
| DIRECT TEACHING, hours/ ECTS | 80 h / 3,2 ECTS |
| Preparation for tutorials | 35h |
| Preparation for laboratories | 30 h |
| Preparation for projects | - |
| Preparation for seminars | - |
| Preparation for e-learning classes | - |
| Participation in e-learning classes | - |
| Working on project | - |
| Preparation for tests | 30 h |
| Preparation for exam | - |
| SELF-STUDY, hours/ ECTS | 95 h / 3,8 ECTS |
| TOTAL (hours) | 175 ∑ |
| TOTAL ECTS | 7 ECTS |

PRIMARY AND SUPPLEMENTARY TEXTBOOKS

| Current the State Environmental Monitoring Programme |
|--|
| Jones A., Duck R., Reed R., Weyers J.: Environmental sciences, PWN, Warsaw 2002 |
| Current legislations with respect to environmental monitoring with respect to the water, soil, |
| Air |
| Sibi, G., Environmental Biotechnology Fundamentals to Modern Techniques, CRC Press, |
| 2023 |
| Environmental Protection, GUS, Warsaw (current) |

SUBJECT COORDINATOR (NAME, SURNAME, E-MAIL ADDRESS)

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