University of Gdańsk

Subject card

Subject name and code	Water melioration - tutorials, PG_00192619		
Field of study	Water Management and Protection of Water Resources		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Subject group related to practical vocational preparation
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	practical	Assessment form	credit
Conducting unit	Department of Hydrology -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Izabela Chlost	
	Teachers		

Lesson types

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

- Learning the principles of designing basic and detailed drainage systems.
- Methods for calculating agricultural water resources and characteristic flows.
- Characteristics of water management and water needs of soils and plants.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GWOZWL3-W06] The student has advanced knowledge of issues relating to hydraulic engineering and water treatment and wastewater treatment processes.	The student knows and is able to discuss technical and non-technical methods of improving water conditions in the soil used in irrigation and drainage meliorations.	[SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
[GWOZWL3-K06] The student has the ability an informed and reliable assessment of the impact of humans on the aquatic environment.	The student is able to assess the impact of shaping water conditions using drainage methods and determine their positive and negative effects on the environment water.	[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report [SK5] implementation of a problem task
[GWOZWL3-U01] The student can make basic observations of processes and phenomena occurring in the hydrosphere and carry out basic measurements of selected processes of water purification on a laboratory scale.	The student is able to carry out basic measurements and calculations related to air-water relations in the soil and calculate parameters characterizing water resources, characteristic flows and selected hydrotechnical devices used in land improvement.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report

<table>
<tr><td>Subject contents</td><td>

- Calculating the water balance of agricultural areas - climatic water balance.
- Soil water retention curve (pF) - water easily available to plants.
- Distribution of air-water relations in the soil.
- Drainage - calculation of drainage spacing.
- Determining technical parameters of water, drainage and irrigation devices.
- Calculating water demand for irrigation.
- Water management in polders and protected areas affected by drainage.

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<tr><td>Prerequisites and co-requisites</td><td>Basics of hydrology and knowledge about the principles of water circulation in nature.</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>projects complition</td><td>51.0%</td><td>100.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>

- Marcilonek S., Kostrzewa S., 1974, Guide to exercises in agricultural land improvement and surveying elements, Ed. III corrected and extended, Scripts of the Agricultural University of Wrocław, Wrocław.
- Ostromęcki J., 1980, Hydraulic methods for determining the spacing of drainage devices, IMUZ, PWRiL, Warsaw.
- Somorowski Cz., 1965, Guide to agricultural land improvement exercises, Publishing Department of the Warsaw University of Life Sciences, Warsaw.

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<tr><td>Supplementary literature</td><td>

- Łata B., Stankiewicz-Kosyl M., Wińska-Krysiak, 2019, Guide to exercises in soil cultivation and fertilization of horticultural plants, Ed. SGGW.

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<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>

- Assessment of rainfall deficiency during the growing season. Calculation of the climatic water balance for a selected catchment area.
- Calculation of characteristic flows on streams without hydrometric control.
- Plotting the pF curve for sandy soils.
- Designing the method and amount of irrigation for garden crops.

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<tr><td>Work placement</td><td>Not applicable</td></tr>
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