



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Water Supply Systems

Course

Field of study

Environmental Engineering

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

2/4

Profile of study

general academic

Course offered in

English

Requirements

elective

Number of hours

Lecture

15

Laboratory classes

Tutorials

Projects/seminars

15

Other (e.g. online)

Number of credit points

6

Lecturers

Responsible for the course/lecturer:

Wojciech Góra, Ph.D.

Responsible for the course/lecturer:

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Institute of Environmental Eng. and Building

Installations

Faculty of Environmental Engineering and

Energy

ul. Berdychowo 4 61-131 Poznań

Prerequisites

Basic knowledge of hydraulics and fluid mechanics

Course objective

Acquisition of basic knowledge in the field of the water supply systems, with a particular focus on the water distribution system components, pipeline alignment and regional planning, trenchless technologies for piping, determination of water demands and demands variability, hydraulic design of pump system, and storage tanks as well as hydraulic calculations methods of pipeline systems.



Acquiring the ability to solve the complex problems related to the subject in an interdisciplinary perspective, with taking into account the existing organizational and legal conditions.

Course-related learning outcomes

Knowledge

The student has the basic knowledge in terms of water supply systems and water distribution system components suitable to formulate and solve simple problems of environmental engineering.

The student knows the basic methods techniques and tools applied to solve simple engineering tasks in water supply systems.

The student has the basic knowledge necessary to understand social, economic, legal and other non-technical conditions of engineering activities, including the principles of sustainable development.

Skills

Application of knowledge of the above mentioned subjects. Acquiring knowledge from the literature, electronic resources and databases. The ability to self-education, the ability to conceptual thinking and reasoning.

Social competences

The student aware of non-technical aspects and effects of engineering activity, including its environmental impact, concerning water management and hydrology.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written examination.

Written reports/exercices.

Programme content

Overview of water supply systems and water distribution system components, pipeline alignment and regional planning, trenchless technologies for piping, determination of water demands and demands variability, hydraulic design of pump system, and storage tanks; hydraulic calculations methods of pipeline systems, GIS in water distribution systems, computer models of water distribution system (analysis and parameters), operation of water distribution systems, water quality aspects.

Teaching methods

Multimedia presentations and problem lectures.

Bibliography

Basic

1. Larry W. Mays: Water distribution systems handbook
2. Thomas M. Walski: Analysis of water distribution systems, New York 1984



Additional

1. Paul A. Longley, Michael F. Goodchild, David J. Maguire, David W. Rhind: Geographic Information System and Science, USA 2001
2. Epanet 2 – users manual

Breakdown of average student's workload

	Hours	ECTS
Total workload	150	6,0
Classes requiring direct contact with the teacher	35	1,5
Student's own work (literature studies, preparation for exam, project/ excercises preparation) ¹	115	4,5

¹ delete or add other activities as appropriate