

### POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

### **COURSE DESCRIPTION CARD - SYLLABUS**

### Course name

Sanitary engineering from ancient times to modern times [N2IŚrod1>IS]

Course

Field of study Year/Semester

Environmental Engineering 1/2

Area of study (specialization) Profile of study

Water Supply, Water and Soil Protection general academic

Level of study Course offered in

second-cycle polish

Form of study Requirements compulsory

**Number of hours** 

Lecture Laboratory classes Other (e.g. online)

12 0

Tutorials Projects/seminars

0 0

Number of credit points

2,00

Coordinators Lecturers

dr inż. Tomasz Schiller

tomasz.schiller@put.poznan.pl

# **Prerequisites**

General historical knowledge obtained in previous education levels and basic knowledge of water supply, sewerage, water treatment and wastewater treatment obtained at the first-cycle studies

# Course objective

To familiarize students with the knowledge on how water supply and sewage disposal as well as wastewater treatment has changed over the centuries, and how modern sanitary engineering has evolved.

# Course-related learning outcomes

### Knowledge:

Getting to know the achievements of civilization in the field of water supply and sewage systems in ancient civilizations, the Middle Ages and modern times.

#### Skills:

The student can discuss topics related to the formation and development of water supply and sewerage systems from ancient times to modern times.

#### Social competences:

Awareness of continuous improvement and deepening of one's competences

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written test with open and closed questions

# Programme content

Water supply and sewage disposal in ancient civilizations.

Water supply and sewage disposal in the Middle Ages.

The beginnings of modern water supply and sewage systems.

The concept of public health.

Development of modern water and wastewater treatment systems.

# **Teaching methods**

Lecture, multimedia presentation

# **Bibliography**

#### Basic:

Wodociągi i kanalizacja w Polsce - tradycja i współczesność. red. nauk. M.M.Sozański, wyd. Polska Fundacja Ochrony Zasobów Wody, Poznań-Bydgoszcz, 2002.

#### Additional:

Jenkins D., Wanner J., Activated sludge – 100 years and counting, IWA Publishing, Londyn 2014.

# Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	10	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	15	0,50