## POZNAN UNIVERSITY OF TECHNOLOGY



### EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

# **COURSE DESCRIPTION CARD - SYLLABUS**

Course name

Sanitary engineering from ancient times to modern times

Course

Field of study Year/Semester

**Environmental Engineering Second-cycle Studies** 1/1

Area of study (specialization)

Water Supply, Water and Soil Protection

Level of study

Second-cycle studies

Form of study

full-time

Profile of study

general academic Course offered in

Polish

Requirements

elective

#### Number of hours

Lecture Laboratory classes Other (e.g. online)

20

**Tutorials** Projects/seminars

# **Number of credit points**

2

#### **Lecturers**

Responsible for the course/lecturer:

Responsible for the course/lecturer:

dr hab.inż. Zbysław Dymaczewski, prof.PP

email: zbyslaw.dymaczewski@put.poznan.pl

tel.61 6653662

Faculty of Environmental Engineering and

Energy

ul. Berdychowo 4, 61-131 Poznań

**Prerequisites** 

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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.

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# 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	50	2,0
Classes requiring direct contact with the teacher	20	1,0
Student's own work (literature studies, preparation for	30	1,0
laboratory classes/tutorials, preparation for tests/exam, project		
preparation) <sup>1</sup>		

3

<sup>&</sup>lt;sup>1</sup> delete or add other activities as appropriate