



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Sanitary engineering from ancient times to modern times

### Course

Field of study

Environmental Engineering Second-cycle Studies

Area of study (specialization)

Heating, Air Conditioning and Air Protection

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

### Number of credit points

1

### Lecturers

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

Responsible for the course/lecturer:

### 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.Szozański, 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	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies, preparation for laboratory classes, preparation for tests, project preparation) <sup>1</sup>	10	0,5

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