

COURSE DESCRIPTION CARD			
The name of the course/module BUILDING INSTALLATIONS - SANITARY FITTINGS			Code A_K_1.6_008
Main field of study ARCHITECTURE	Educational profile (general academic, practical) general academic		Year / term III/6
Specjalization	Language of course: Polish		Course (core, elective) core
Hours: Lectures: 15 Classes: - Laboratory classes: - Projects / seminars: -			Number of points 2
Level of qualification: I	Form of studies (full-time studies/part-time studies) Full-time studies and part-time studies	Educational area(s) Technical Sciences	ECTS division (number and %)
Course status in the studies' program (basic, directional, other) directional		(general academic, from a different major)	
Lecturer responsible for the course: dr inż. Władysław Organista Faculty of Architecture ul. Nieszawska 11A, 61-021 Poznań tel. 61 665 33 05		Lecturer: dr inż. Władysław Organista Faculty of Architecture ul. Nieszawska 11A, 61-021 Poznań tel. 61 665 33 05	
Prerequisites defined in terms of knowledge, skills, social competences:			
1	Knowledge:	<ul style="list-style-type: none"> - Student has explicit, theoretically based knowledge including the key issues of water-supply and sewage systems - Student knows the basic methods, techniques, tools and materials used at solving simple engineering tasks in the scope of water-supply and sewage systems - Student has basic knowledge on modern trends in the scope of used energy-saving interior water-supply and sewage systems 	
2	Skills:	<ul style="list-style-type: none"> - Student can acquire information from publications, data bases and other Polish and English sources, can interpret and integrate the said information and draw conclusions as well as voice and justify opinions - Student can communicate using different tools in the professional environment and in other environments - Student can use IT techniques respectively to the performance of tasks typical for engineering activities 	
3	Social Competences:	<ul style="list-style-type: none"> - Student understands the need of continuous self-education; can inspire and organize education process of other people - Student is aware of the importance of non-technical aspects and effects of engineering activities, in this impact upon the environment and liability for environment affecting decisions - Student can work and can cooperate in a team, assuming a number of different roles therein 	
Objective of the course:			
<ul style="list-style-type: none"> • Learning the latest knowledge in the scope of water-supply and sewage systems • Becomes familiar students with calculation methodology of water-supply and sewage systems of residential building on improved and unimproved land • Becomes familiar students with the principles of the selection of water equipment (water heater, pumps, sets of pressure tanks) to sizes calculated in designing cold and hot water system and circulator and sewage • Obtaining the ability to creative assessment in designing water-supply and sewage system 			
Learning outcomes			
Knowledge:			

W01	Student has proper knowledge in the field of mathematics useful for the formulation of architectural and structural designing related tasks and useful for the solutions of such tasks;	AU1_W08
W02	Student has basic knowledge of useful lives of structural facilities and their technical infrastructure systems.	AU1_W22
Skills:		
U01	Student can make calculations in the area of utility systems, can prepare specification of materials;	AU1_U12
U02	Student can design sewage, hot and cold water supply systems and is familiar with the principles of the selection of water equipment, pumps, sets of pressure tanks	AU1_U19
Social competences:		
K01	Student can work over a set task independently and can cooperate in a team, assuming a number of different roles therein; demonstrates responsibility in the work performance;	AU1_K01
K02	Student can think and act in an entrepreneurial, creative and innovative manner.	AU1_K07
The evaluation methods:		
<p>There is proposed written and oral exam as an evaluation methods of learning outcomes. Student can take an exam if he/her got positive mark for elaboration and project defense in the scope of cold and hot water installation and sewage system (domestic waste water, rain wastewaters), which student implementing as part of design classes of building installation.</p> <p>Final grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0</p> <p>Positive grade for module depends on achieved by student all learning outcomes specified in the syllabus.</p>		
Course contents		
<p>Within the studies' program student listening lectures and becomes familiar with legal regulations requirements of hot and cold water installation, sanitary sewerage and storm water drainage.</p> <p>There are discussed required types of elements and devices used in water-supply systems and sewage systems in low and high buildings, schemas of water-supply systems with groundwater and surface water intake as well as systems of fire protection system and them importance.</p> <p>There are presented principles of designing and calculation of interior water-supply system (hot, cold and circular water) as well as domestic waste water and rain wastewaters systems in building in the area of big cities.</p> <p>Student becomes familiar with trends of changes in the scope of designing and calculation methods with using new products (elements, materials, devices) to installation.</p>		
Basic bibliography:		
<ol style="list-style-type: none"> 1. Chudzicki J., Sosnowski S. Instalacje wodociągowe. Projektowanie, wykonanie, eksploatacja. Wyd. Seidel-Przywecki Sp. z o.o. Warszawa 2009. 2. Chudzicki J., Sosnowski S. Instalacje kanalizacyjne. Projektowanie, wykonanie, eksploatacja. Wyd. Seidel-Przywecki Sp. z o.o. Warszawa 2009. 3. Szaflik W. Projektowanie instalacji ciepłej wody w budynkach mieszkalnych. Wydawca : Ośrodek Informacji Technika instalacyjna w budownictwie. Warszawa 2011. 4. PN – 92 / B – 01706 Instalacje wodociągowe. Wymagania w projektowaniu. 5. PN – EN 806-1 : 2004 Wymagania dotyczące wewnętrznych instalacji wodociągowych do przesyłu wody przeznaczonej do spożycia przez ludzi. Cz. I. Postanowienia ogólne. 6. PN – 92 / B – 01707 Instalacje kanalizacyjne. Wymagania w projektowaniu. 7. PN – EN 12056 – 1 : 2002 Systemu kanalizacji grawitacyjnej wewnątrz budynków. Arkusz Wymagania ogólne i użytkowe. 		
Supplementary bibliography:		
<ol style="list-style-type: none"> 1. Cieślowski S., Krygier K., Instalacje sanitarne cz. 1.WSiP Warszawa 2008. 2. Heidrich Z. Wodociągi WSiP Warszawa 1999. 3. Heidrich Z. Kanalizacja WSiP Warszawa 2006. 4. Koczyk H., Antoniewicz B. Nowoczesne wyposażenie domu jednorodzinnego. Instalacje sanitarne i grzewcze. Wyd. Rolnicze i Leśne Poznań 2004. 		
The student workload		
Form of activity	Hours	ECTS

Overall expenditure	75	2
Classes requiring an individual contact with teacher	39,5	1
Practical classes	22,5	-

Balance the workload of the average student

Form of activity	Number of hours
participation in lectures	15 h
participation in classes/ laboratory classes (projects)	15 h
preparation for classes/ laboratory classes	15 x 0,5 h=7,5 h
preparation to colloquium/final review	15 h
participation in consultation related to realization of learning process	15 x 0,5 h=7,5 h
preparation to the exam	13 h
attendance at exam	2 h

Overall expenditure of student: **2 ECTS credits** **75 h**

As part of this specified student workload:

- activities that require direct participation of teachers:

$$15 \text{ h} + 15 \text{ h} + 7,5 \text{ h} + 2 \text{ h} = 39,5 \text{ h}$$

1 ECTS