PLUMBING

Course Code/Course ID : Instalacje wewnętrzne 01WBUD_pNadGenYBVWW

Type of course: obligatory

Teaching language: English

Director of studies: dr inż. Ireneusz Nowogoński

Name of lecturer: IEE teachers

Form of instruction	Number of teaching hours per semester	Number of teaching hours per week	Semester	Form of receiving a credit for a course	Points ECTS
Full-time studies					4
Lecture	30	2		Grade with notes	
Project	45	3		Grade with notes	

THE AIM OF THE LECTURE:

Familiarize students with the principles of design and dimensioning of internal plumbing and connections of water - sewage.
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ENTRY REQUIREMENTS:

Formal: completion of the course – Fluid Mechanics, General and Installation Materials Sciences.

Informal: None.

SCOPE OF COURSE TOPICS:

Lecture:

Domestic cold drinking water connection, components, materials, performance, layout water meter. Internal water installations: installation of systems and their armaments, rules of dimensioning. Equipment Reservoir. Aqueous plant fire. Hot water installations. Sanitary and Rain-Water Sewer Connection system. Internal drainage systems: sanitary utensils and armament components, sizing of drainage pipes with horizontal and vertical. Internal sewage, drainage and vacuum Sewerage. Central heating water systems

Project:
The project incorporates water and sewerage, installation of hot and cold water from the circulation, installation of sewage and rainwater for building multi-family.

TEACHING METHODS:

Presenting methods: informational-problem solving lecture.

Solving methods, seminar – practical: project method..

LEARNING OUTCOMES:

Symbol	Learning outcomes after completion of the course. Student:	The reference to the effects of education in the field of technical sciences
Knowledge		
K_W13	Is well - informed in low regulations relatied to drinkin-water requirements knows basic concepts, objectives and tasks of the supply water systems and sewerage systems for various purposes	**T1A_W04**
K_W18	has general knowledge of the elements of the internal water supply and plumbing, knows the dimensioning and explitation, knows techniques and the tools used to solve simple engineering tasks in this field	**T1A_W04; T1A_W07**
Skill		
K_U01	can obtain information from literature, databases and other properly selected sources	**T1A_U01**
K_U19	can design the plumbing in a residential building	**T1A_U14; T1A_U16**
Social competences		
K_K06	correctly identifies and resolves dilemmas associated in the profession of environmental engineer	**T1A_K05**
K_K03	recognizes and understands the importance and impact of nontechnical aspects of environmental engineering business, including its impact on the environment and the resulting responsibility for decisions	**T1A_K02**

ASSESSMENT CRITERIA:

Lecture - Obtainment positive from exam. Examination has written form and it contains 3 problematic questions. Project – positive evaluation from Project Seminar, considering presence on seminar, performing two projects and knowledge from the range of topics.
Got points / Opinion - 0-50% / insufficient;51-60% / sufficient; 61-70% / sufficient plus; 71-80% / good; 81-90% / good plus; 91-100 / very good positive exam note. The basis for determining the cumulative rating is the weighted average obtained by adding: 0.67 lecture grade, 0.33 assessment from project classes. The weighted average is rounded to two decimal places. The total rating is based on the weighted average according to the rule: below 3.24 - sufficient, from 3.25 to 3.74 - satisfactory plus, from 3.75 to 4.24 - good, from 4.25 to 4.74 - a good plus, from 4.75 – very good.

SELF STUDENT'S WORK:

Contact hours: 75 hours.
Student's independent work: 25 hours

RECOMMENDED READING:

1. Sosnowski S., Chudzicki J., Tabernacki J., Water supply and sewage installations. Warszawa 2000
2. Chudzicki J., Sosnowski S., Water supply installations – design, implementation, operation, Seidel-Przywecki, Warszawa 2005
3. Chudzicki J., Sosnowski S., Sewage installations – design, implementation, operation, Seidel-Przywecki, Warszawa 2004
4. Regulation of the Minister of Infrastructure 02.04.2002 regarding the conditions which should be met by buildings and their location.

OPTIONAL READING:

1. Collective work, technical guidelines for the implementation and acceptance of plastic installations, Polish Corporation for Sanitary and Heating, Gas and Air Conditioning Techniques. Warszawa 1996
2. Catalogs of producers of pipes and sewage facilities
3. Standards and regulations

REMARKS