COURSE DESCRIPTION CARD - SYLLABUS

Course name
History of energy-efficient buildings [N2IŚrod1>HBE]

Course

Field of study
Environmental Engineering

Year/Semester
1/2

Area of study (specialization)
Water Supply, Water and Soil Protection

Profile of study
general academic

Level of study
second-cycle

Course offered in
polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
8

Laboratory classes
0

Other (e.g. online)
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

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Lecturers

dr inż. Joanna Sinacka
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Prerequisites

Knowledge of general history at high school level. Basic knowledge of architecture and construction at the 1st cycle studies. Knowledge of heating, automation elements, energy management and renewable energy sources at the level of first-cycle studies.

Course objective

Getting to know the history and evolution of energy-efficient buildings in Poland, Europe and the world.

Course-related learning outcomes

Knowledge:
The student has knowledge of technical solutions for reducing energy demand in buildings in subsequent historical periods.

Skills:
The student is able to assess the type of construction and installation solutions and the level of energy efficiency of the building based on the time of its construction.

Social competences:
Awareness of the importance of knowledge of history and its impact on the life of modern man and on the quality of buildings.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The knowledge acquired in the lecture is verified by a written final test in the last class. Required minimum of 50% points.

Programme content

History of the earliest - neolithic revolution. Ancient Greece - architectural styles, greek house. Ancient Rome - public buildings, roman villas, insulae, aqueducts, therme. Medieval and modern times - architecture, castles, locks of the homestead. Industrial revolution and its features, urban development in XIX and XX century. History od heating and air conditioning, systainable development. Historical metods and parameters for assessing the energy quality of buildings. Standard of passive and close to zero -energy buildings. Development and current state of history the use of renewable energy sources. Impact of automation and control on energy demand in buildings - awareness of the problem in the history of construction and today..

Teaching methods

Lecture with multimedia presentation

Bibliography

Basic:
Ziółkowski A.: Histori powszechna. Starożytność. Wyd. PWN 2009.
Gies J., Gies F.: Życie w średniowiecznym zamku. Wyd. Znak Horyzont 2027.
Gies J., Gies F.: Życie w średniowiecznej wsi. Wyd. Znak Horyzont 2028.
Mielnicki S., Centralne ogrzewanie : regulacja i eksploatacja, Warszawa : Arkady, 1974
Kwiatkowski J., Cholewa L. Centralne ogrzewanie : pomoce projektanta, Warszawa : Arkady, 1980.
Feist W.: Podstawy budownictwa pasywnego. PIBP Gdańsk 2007.
Kaczkowska A.: Dom pasywny. Wyd. Kabe 2009.
Recknagel H., Sprenger E., Schramek E.R.: Kompendium wiedzy: ogrzewnictwo, klimatyzacja, ciepła woda, chłodnictwo, Wydawnictwo Omni Scala, Wrocław 2008.
Niezabitowska E.: Dom inteligentny. Wyd. Politechniki Śląskiej, Gliwice 2005.PN-91/B-02020 – Ochrona cieplna budynków.
PN-B-02025 – Obliczenia sezonowego zapotrzebowania na ciepło.
PN-EN 832: 2001 Właściwości cieplne budynków - Obliczanie zapotrzebowania na energię do ogrzewania - Budynki mieszkalne

Additional:
Kołodziejczyk S.: Zasady doboru grubości murów z cegły do stref klimatycznych Polski, Inż. i Bud. 1949, Biul. IBB 1949, nr 41
Rietchel /Rai
PN-57/B-02403 – Najniższe temperatury obliczeniowe otoczenia budynków nieogrzewanych przestrzeni zamykanych.
PN-57/B-03404 – Współczynnik przenikania ciepła K
PN-64/B-02402 – Temperatura obliczeniowa pomieszczeń ogrzewanych w budynkach.
PN-64/B-03404 – Współczynnik przenikania ciepła K dla przegród budowlanych
PN-82/B-02020 – Ochrona cieplna budynków.
Sear F., Roman Architecture, Cornell University Press, 1983

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	8	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	17	0,50