COURSE DESCRIPTION CARD - SYLLABUS

Course name
History of development of transport infrastructure [S1Bud1>HRIT]

Course

Field of study
Civil Engineering

Year/Semester
1/1

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
elective

Number of hours

Lecture
30

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

3,00

Coordinators

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Lecturers

Prerequisites

KNOWLEDGE: Student beginning this course should have knowledge of history, mathematics and physics on level appropriate for high school graduates. SKILLS: Student should have an ability for logical thinking, including combining facts to reach new conclusions; should have an ability to use available information sources, including electronic sources SOCIAL COMPETENCIES: Student should be ready to cooperate with other students and with the lecturer, should know it is necessary to avoid actions disrupting other student's learning; should apply rules of culture and social cohabitation, notices other people's needs.

Course objective

1. Learning about the outline of the history of transport infrastructure elements, the formation of the layout of roads, railroads and bridges in the world and Poland over the years; 2. Learning about selected legal and economic processes in communication engineering based on historical examples - according to the principle Historia magistra vitae est; 3. Learning about the impact of history on the current shape of transportation infrastructure: 4. Learning about the world achievements of selected Polish civil engineers in transportation engineering; 5. Learning about the outline of the history of the formation of structural elements of automobile and railroad roads, traffic control systems and bridges.

Course-related learning outcomes

KNOWLEDGE: Student:
1. Has knowledge about an influence of history on design and realisation of transport infrastructure;
2. Has basic knowledge about history of road construction methods and about chosen economical processes influencing development of cities' layout and transport infrastructure;
SKILLS: Student:
1. Can, while solving civil engineering problems, notice these problems' comprehensive and nontechnical aspects, including ethical and historical aspects;
2. Can evaluate dangers for construction works and processes resulting from history of the construction site;
3. Can evaluate a historical context of a transport infrastructure project.
SOCIAL COMPETENCIES: Student:
1. Has an ability to evaluate circumstances connected with construction of given objects and a need to adapt them to new needs;
2. Understands a need to care for traditions and achievements of engineer's profession.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The acquired knowledge from the lectures is verified by a written colloquium done on the last lecture. The colloquium has a form of a multiple choice test with penalty for wrong answers, and can be supplemented by questions of "list with a short description" type. With a small number of students the form may be changed into an oral colloquium - details should be given at the first lecture. To pass the colloquium, students should acquire at least 50% of points. Activity during the lectures and in Ekursy system may be taken into account during the colloquium's score evaluation.Topics for the colloquium will be given to students during the first lecture or by email.
Grade scale:
50-59% - 3,0
60-69% - 3,5
70-79% - 4,0
80-89% - 4,5
90-100% 5,0.

Programme content

The program content covers three topics:
1) History of road infrastructure.
2) History of bridge infrastructure.
3) History of railway infrastructure.

Course topics

Characteristics and condition of public road network in Poland and in the world at specific stages of road development (including the history of road construction in the Polish lands before independence). Evolution of road machinery. History of road administration. History of motorway construction in the world. Motorway construction programs in Poland in the interwar period of the 20th century, during World War II, during the People's Republic of Poland and in the Third Republic of Poland.
Outline of the history of bridge construction in the world and in Poland. Key stages in the development of bridge building in the world. Great Polish bridge builders and their great bridge works in the world. Development of bridge construction technology and its consequences.
Outline of railway history and key stages of its development. The impact of history, technology and physical

limits on the establishment and development of the railroad and tramway network in the world and in Poland. Outline of the history of railroad infrastructure elements. Development of methods and technologies for construction and repair of railroads.

Teaching methods

An informative lecture including elements of a conversation lecture, utilising a multimedia presentation with an occasional use of a blackboard.

Bibliography

Podstawowa:
1. Rosset A. „Starożytne drogi i mosty". WKiŁ. Warszawa 1970.
2. Rosset A. „Drogi i mosty w średniowieczu i w czasach odrodzenia". WKiŁ. Warszawa 1997.
3. Kaliński J. „Autostrady w Polsce, czyli drogi przez mękę". Księży Młyn. Dom Wydawniczy. Warszawa 2011.
4. Brown D.: Mosty. Trzy tysiące lat zmagań z naturą, Wydawnictwo Arkady, 2007
5. Ryżyński A.: 750 lat poznańskich mostów, Wydawnictwo Politechniki Poznańskiej, Poznań 2003
6. Biliszczuk J.: Mosty w dziejach Polski, DWE Dolnośląskie Wydawnictwo Edukacyjne, Wrocław 2017
7. Biliszczuk J.: Mosty łukowe w Polsce. Historia, współczesność, przyszłość, Dolnośląskie Wydawnictwo Edukacyjne, Wrocław 2015
8. Cragoe Davidson C., „Jak czytać architekturę. Najważniejsze informacje o stylach i detalach", Wydawnictwo Arkady, Warszawa, 2010
9. Jankowiak I., „Podstawy budownictwa mostowego", Wydawnictwo Politechniki Poznańskiej, Poznań 2019
10. Warkoczewska M., „Portret Miasta. Poznań w malarstwie i grafice", Wydawnictwo Miejskie, Poznań 2000.
11. Jędrzejewski K., „Mosty świata", Wydawnictwo Bellona, Warszawa 2011.
12. Dylewski A.: Historia kolei w Polsce. P.H.W. Fenix, Wierzchy Parzeńskie 2014.
13. Mazurek T.: Budowa kolei. WKiŁ, Warszawa 1964.
14. Podoski J.: Transport w miastach. WKiŁ, Warszawa 1985.
15. Tanel F.: Historia kolei: od lokomotyw parowych do kolei magnetycznej. PWN, Warszawa 2008.

Uzupełniająca:
1. Miedziński J. „Technika pracy i władanie narzędziami drogowymi" .Instytut Techniki Budowlanej. Dział Dydaktyczno-Wydawniczy. WKiŁ. Warszawa 1952.
2. https://www.archiwum.gddkia.gov.pl/pl/909/Z-historii-drogownictwa,s-6 Serwis GDDKiA. Z historii drogownictwa. Dostęp: kwiecień 2023.
3. https://wydarzenia.interia.pl/raport-polskiedrogi/news-historia-polskiego-drogownictwa-budowa-drog,nId,1936145 Interia wydarzenia. Historia polskiego drogownictwa. Budowa dróg. Dostęp: kwiecień 2023.
4. Radomski W.: Katastrofy mostów. Historia i teraźniejszość, Dolnośląskie Wydawnictwo Edukacyjne, Wrocław 2021.
5. Sysak. J. red.: Drogi kolejowe PWN, Warszawa 1982.

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	45	2,00