COURSE DESCRIPTION CARD - SYLLABUS

Course name
STRUCTURAL MECHANICS IN HISTORIC ARCHITECTURE

Course

Proposed by Discipline
Civil engineering, geodesy and transport

Year/Semester
II/4, III/6

Type of studies
Doctoral School

Course offered in
English

Form of study
full-time

Requirements
elective

Number of hours

Lecture
4

Tutorials

Projects/seminars

Number of credit points

1

Lecturers

Responsible for the course/lecturer:
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Responsible for the course/lecturer:

Prerequisites

Knowledge: basic knowledge on history of world architecture. Basic knowledge on foundations of structural mechanics.

Skills: at least minimal sensibility to beauty of architecture.

Social competencies: interest in broadening knowledge in various technical fields.

Course objective

Presentation of main ideas related to the inter-connection between architecture and mechanics, between the beauty of the civil engineering structure and soundness of its mechanical design.

Presentation of the selected milestone achievements in the world history of architecture in the light of the structural design and construction materials. Presentation of application of simple models from structural mechanics to selected examples from the historic architecture.

Course-related learning outcomes

Knowledge

A PhD student who graduated from doctoral school knows and understands:
1) relations between the architecture and structural mechanics, [P8S_WG/SzD_W01], [P8S_WG/SzD_W02]
2) limitations in structural design resulting from the available materials and technology. [P8S_WG/SzD_W01], [P8S_WG/SzD_W02]

Skills

A PhD student who graduated from doctoral school can:
1) attempt finding the connection between architecture, material and design for particular monuments of architecture. [P8S_UW/SzD_U01]

Social competences

A PhD student who graduated from doctoral school is ready to:
1) discuss the problems of architecture and structural mechanics. [P8S_KK/SzD_K01], [P8S_KK/SzD_K03]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

PQF code	Methods for verification of learning outcomes	Assessment criteria
W01, W02	Writing a brief illustrated text on a selected monument/structure with comments on its aesthetics, materials used and type of the structural model	The originality of the choice and description will be assesed
U01	Writing a brief illustrated text on a selected monument/structure with comments on its aesthetics, materials used and type of the structural model	The originality of the choice and description will be assesed
K01, K03	Writing a brief illustrated text on a selected monument/structure with comments on its aesthetics, materials used and type of the structural model	The originality of the choice and description will be assesed

Programme content

1. Introduction to the key aspects of relations between architecture, mechanics and structural materials.
2. Illustrated journey through the history of architecture and civil engineering.
3. Examples of application of simple mechanical models to selected architectural monuments.

Teaching methods

Lecture: multimedia presentation including illustrations and examples.

Bibliography

Basic

1. A. Litewka, P. Litewka, Mechanika budowli w architekturze historycznej, Wydawnictwo Politechniki Poznańskiej, 2020

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,0
Classes requiring direct contact with the teacher	4	0,2
Student's own work (literature studies, preparation for tutorials, project preparation, consultations with the teacher) [1]	21	0,8

[1] delete or add other activities as appropriate