



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Preparation for scientific research

Course

Field of study

Year/Semester

Civil Engineering

2/3

Area of study (specialization)

Profile of study

Structural Engineering

general academic

Level of study

Course offered in

Second-cycle studies

polish

Form of study

Requirements

part-time

compulsory

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

10

Number of credit points

16

Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

dr hab. inż. Maciej Szumigała, university prof.

Prerequisites

Advanced knowledge of the strength of materials and mechanics of buildings, metal structures, reinforced concrete, masonry, wooden as well as general and industrial construction

The ability to obtain information from the indicated sources, prepare complete documentation design of various objects.

Awareness of the need to expand one's competences and take serious responsibility in future professional work

Course objective

Acquiring the ability to expand knowledge by reading scientific and technical and public press presentation of the acquired knowledge and the results of own work. Preparation of the diploma thesis, preparation for the exam is the basis for recognizing research problems and possible work scientific



Course-related learning outcomes

Knowledge

know in detail the principles of analysing, constructing and dimensioning elements and connections in selected building structures.

have extended and detailed knowledge of material strength, modelling and constructing; have knowledge of theoretical principles of the finite element method as well as general rules of non-linear calculations of engineering structures.

know in detail the rules of design, construction and operation of selected building units.

Skills

can prepare an evaluation and statement of strengths influencing both simple and complex building units.

can design elements and connections in complex building units, working both individually and in a team.

can perform a classical static and dynamic analysis and stability analysis of statically determinate and non-determinate bar structures (trusses, frames and strands); as well as surface construction (discs, plates, membranes and shells).

are able to prepare a building unit design and technical documentation in the environment of selected CAD software, including the usage of BIM technology.

Social competences

take responsibility for the reliability of working results and their interpretation.

are ready to autonomously complete and broaden (extend) knowledge in the field of modern processes and technologies of building engineering.

can realise that it is necessary to improve professional and personal competence; are ready to critically evaluate the knowledge and received content

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The method of preparing the diploma thesis and preparation for the diploma examination remains assessed by the promoter on the basis of commitment, ability, diligence and possessed knowledge by the graduate student.

Programme content

In line with the topic of the thesis.



Teaching methods

Direct contact with graduate student during the consultation of the thesis.

Bibliography

Basic

Books and technical and scientific-technical studies.

EC

Additional

Scientific and technical literature

Breakdown of average student's workload

	Hours	ECTS
Total workload	400	16,0
Classes requiring direct contact with the teacher	10	0,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	390	15,5

¹ delete or add other activities as appropriate