



## 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

full-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 Szumigala, prof. PUT

### Prerequisites

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

Ability to obtain information from the indicated sources, prepare complete design documentation for various objects.

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

### Course objective

Acquiring the skills to expand knowledge by reading the scientific and technical press, public presentation of the acquired knowledge and the results of one's own work. Completing the diploma thesis and preparation for the exam is the basis for recognizing research problems and possible undertaking research work

### Course-related learning outcomes

Knowledge



1. KB\_W02 have advanced knowledge of the principles of descriptive geometry and technical drawing, and using the Building Information Modelling (BIM) technology. P7S\_WG (I)
2. KB\_W04 have detailed knowledge of theoretical mechanics, knowledge of materials' strength and general rules of structure design; know the theories explaining complex relations of structures.h - [P7S\_WG (O/I)]

#### Skills

1. KB\_U01 are able to gather information from literature, databases and other properly selected information sources; can synthesize the obtained information, interpret and evaluate it, as well as draw conclusions, formulate, discuss and justify opinions and positions - [P7S\_UW (I)]
2. KB\_U02 are able to use advanced information and communication technologies (ICT) appropriate to perform typical engineering tasks. - [P7S\_UW
3. KB\_U03 when formulating and solving problems related to building engineering, they can notice their systemic and non-technical aspects, including ethical aspects. - [P7S\_UW (O/I)]
4. KB\_U05 can classify buildings building structures. - [P7S\_UW (I)]

#### Social competences

- KB\_K01 are able to adapt to new and changing circumstances, can define priorities for performing tasks assigned by themselves and by other people, acting in the public interest and with regard to the purposes of sustainable development. - [P7S\_KK (O)]
2. KB\_K03 are ready to autonomously complete and broaden knowledge in the field of modern processes and technologies of building engineering. - [P7S\_KR (O)]
  3. K3. B\_K05 are ready to autonomously complete and broaden knowledge in the field of modern processes and technologies of building engineering. - [P7S\_KK (O)]

#### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The method of preparing the diploma thesis and preparing for the diploma examination is assessed by the promoter on the basis of the diploma's commitment, ability, diligence and knowledge.

#### Programme content

In line with the topic of the thesis

#### Teaching methods

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

#### Bibliography

Basic

1. Books and technical and scientific-technical studies



2. PN i 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	5,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	390	11,0

<sup>1</sup> delete or add other activities as appropriate