



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Preparation of the diploma thesis with elements of scientific research

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### Course

Field of study

Sustainable Building Engineering

Area of study (specialization)

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Level of study

First-cycle studies

Form of study

full-time

Year/Semester

4/7

Profile of study

general academic

Course offered in

english

Requirements

compulsory

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### Number of

#### hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

5

#### Number of credit points

15

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### Lecturers

Responsible for the course/lecturer:

Prodziekan ds. kształcenia

dr inż. Marlena KUCZ

email: marlena.kucz@put.poznan.pltel.

616652864 WILIT, Piotrowo 5, Poznań

Responsible for the course/lecturer:

Supervisors

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### Prerequisites

Basic knowledge (at the engineering level) on the strength of materials and building mechanics, basics of construction, metal, reinforced concrete, masonry, wooden / communication constructions (bridges, roads, railways)

#### Course objective

Acquiring practical skills in the field of construction, dimensioning and preparation of partial construction documentation of a simple building structure.

#### Course-related learning outcomes

Knowledge

depends of topic of thesis



- has basic knowledge about algorithms of selected computer programs (including those using BIM technology) supporting the calculation and design of building structures, the organization of construction works and costing
- knows the standards and guidelines for the design of buildings and their components, especially in the context of sustainable construction
  - has basic general knowledge in the field of designing general infrastructure facilities as well as road and rail transport
- knows the detailed principles for the construction and dimensioning of metal, concrete, wooden and masonry building elements and connections
- knows the construction law, national (PN) and European (EN) standards as well as technical conditions for the construction works, as well as basic concepts and principles in the field of industrial property protection and copyright

#### Skills

- knows how to dimension basic structural elements in general, industrial, road, bridge and railway buildings working individually or in a team
- knows how to design selected elements and simple metal, concrete, wooden and masonry structures working individually or in a team
- is able to perform a preliminary economic analysis of basic engineering activities; knows how to prepare a simple cost estimate and work schedule
- can apply the provisions of the construction law and legal acts regarding construction works
- can independently plan and implement their own lifelong learning and use their knowledge in the field of construction to communicate with the environment using specialized terminology, discussing important problems of the construction industry

#### Social competences

are able to adapt to new and changing circumstances, can define priorities for performing tasks defined by themselves and other people, acting in the public interest and with regard to the purposes of sustainable development

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

understand the need to transfer to the society the knowledge about sustainable building engineering, transfers the knowledge in a clear and easily comprehensible manner.

understand that it is necessary to protect the intellectual property and are ready to obey the principles of professional ethics.



### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Completion of the course based on:

- assessment of the diploma thesis presented,
- regularity of its implementation,
- technical problem solving skills.

### Programme content

Compatible with the given topic of the thesis.

### Teaching methods

Discuss with the Student about current problems, clarify on an ongoing basis or provide sources in the literature on the subject to solve problems.

### Bibliography

Basic

1. Scientific and technical literature necessary to prepare the thesis
2. Technical standards and normative
3. Building law etc.,

Additional

### Breakdown of average student's workload

	Hours	ECTS
Total workload	375	15,0
Classes requiring direct contact with the teacher	5	0,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	370	14,5

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