



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Introduction to project with industry [S2Bud1E-ZBZ>WdPzP]

Course

Field of study

Civil Engineering

Year/Semester

1/1

Area of study (specialization)

Sustainable construction and management

Profile of study

general academic

Level of study

second-cycle

Course offered in

English

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

60

Laboratory classes

0

Other

0

Tutorials

30

Projects/seminars

15

Number of credit points

6,00

Coordinators

dr hab. inż. Jerzy Paślawski prof. PP
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Lecturers

Prerequisites

Basic computer skills. Basic knowledge of research procedures and the specificity of conducting scientific research. Ability to communicate in different languages and to work with computer and research equipment. Awareness of the need for lifelong learning, ability to work in a team and take on different social roles.

Course objective

To familiarise students with the possibilities of conducting scientific research within a master's thesis in cooperation with external companies. To provide insight into the nature of problems occurring in construction enterprises, taking into account the requirements of sustainable construction.

Course-related learning outcomes

Knowledge:

- Has knowledge of quality management procedures in construction projects and understands issues related to efficiency, costs, and project duration under conditions of risk and uncertainty.
- Has knowledge of production processes of construction materials and products.
- Has knowledge of running a business in the construction sector and understands the principles of

financial management in enterprises.

Skills:

- Is able to prepare construction schedules, cost estimates, contracts, and business plans for construction projects, manage construction processes, and define responsibilities of construction and investor supervision.
- Is able to analyse risks related to construction projects and building operation, implement appropriate safety measures, and develop work standards and quality management procedures.
- Is able to prepare studies supporting future scientific work.

Social competences:

- Independently develops and expands knowledge in the field of modern processes and technologies in construction.
- Understands the need to communicate knowledge about construction to society.
- Understands the importance of copyright protection and is ready to follow and develop principles of professional ethics and maintain the professional ethos of a civil engineer.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes are verified as follows:

Individual consultations - submission of a project developed within project classes

Group presentations (teams of two) - evaluation of the presentation

Examination - evaluation of an individually developed research problem (with the possibility of cooperation with an industry partner)

Grading scale:

90-100% - very good (A)

80-89% - good plus (B)

70-79% - good (C)

60-69% - satisfactory plus (D)

50-59% - satisfactory (E)

below 50% - fail (F)

Programme content

Lecture 1 - Introduction

Lectures 2-29 - Meetings with cooperating construction companies (lecture/site visit)

Lecture 30 - Assessment

Class 1 - Introduction

Class 2 - Company presentation and identification of problems (I-II)

Class 3 - Company presentation and identification of problems (III-IV)

Class 4 - Company presentation and identification of problems (V-VI)

Class 5 - Company presentation and identification of problems (VII-VIII)

Class 6 - Company presentation and identification of problems (IX-X)

Class 7 - Summary

Class 8 - Assessment

Project 1 - Introduction

Project 2 - Engineering problem discussion I

Project 3 - Engineering problem discussion II

Project 4 - Engineering problem discussion III

Project 5 - Consultation I

Project 6 - Consultation II

Project 7 - Consultation III

Project 8 - Assessment

Course topics

Issues related to the preparation and implementation of research and implementation projects in construction in cooperation with external companies. Analysis of engineering problems occurring in the practice of construction enterprises and possibilities of solving them within project work and scientific

research. Introduction to the organisation of work in construction companies, the construction investment process, and cooperation between academia and industry. Development of skills in formulating research problems, preparing project concepts, and teamwork in engineering projects. Examples of good practices in cooperation between science and industry in the construction sector, with emphasis on sustainable construction solutions.

Teaching methods

Lectures

- problem-based lecture with multimedia presentation
- conversational lecture

Classes

- practical method using various sources of knowledge
- case study analysis

Project

- project-based method (research or implementation project)
- individual work

Bibliography

Basic:

1. Urbanek Grzegorz, Kompetencje a wartość przedsiębiorstwa
2. Nowotarski P., Paslawski J. (2015) Barriers in running construction SME case study on introduction of agile methodology to electrical subcontractor, Procedia Engineering 122:46-57
3. Literatura naukowa związana z wybranym zagadnieniem

Additional:

1. Pasławski J., Rudnicki T. (2021) Agile/Flexible and Lean Management in Ready-Mix Concrete Delivery, Archives of Civil Engineering 67(1):689-709

Breakdown of average student's workload

	Hours	ECTS
Total workload	158	6,00
Classes requiring direct contact with the teacher	105	4,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	53	2,00