



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Construction economics

### Course

Field of study

Year/Semester

Civil Engineering

1/2

Area of study (specialization)

Profile of study

Construction Engineering and Management

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)

15

0

0

Tutorials

Projects/seminars

30

30

### Number of credit points

5

### Lecturers

Responsible for the course/lecturer:

dr inż. Agnieszka Dziadosz

Responsible for the course/lecturer:

dr hab. inż. Wiesław Meszek

### Prerequisites

Knowledge of the structure of the investment process in civil engineering and rules to calculate its costs

### Course objective

**KNOWLEDGE:** Basic knowledge of entrepreneurship. Knowledge of the structure of the investment process in construction and the principles of calculating its costs.

**SKILLS:** The ability to obtain information from literature and the ability to self-study. Ability to use analytical methods to formulate and solve problems

**SOCIAL COMPETENCES:** Awareness of the need to expand knowledge in order to acquire the ability to solve complex decision problems. Awareness of the importance of economic issues in construction against the background of the entire engineering knowledge. Ability to work independently and cooperate in a team on assigned tasks.

### Course-related learning outcomes

Knowledge

The student understands the principles of financial management of a construction company



The student knows the basic measures for assessing the activity of a construction company in terms of finance

The student knows the methods of assessing the economic efficiency of construction projects and the areas of their practical applications

#### Skills

The student is able to prepare a preliminary economic analysis of a construction company using appropriate tools

The student is able to assess the economic efficiency of an uncomplicated investment project using several methods

#### Social competences

The student is able to formulate and present the assessment of engineering solutions in economic terms

The student acquires the ability to work in a team

The student is aware of the importance of knowledge about the basic economic tools in professional activity in construction

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

Learning outcomes presented above are verified as follows:

Lectures: written exam in the deadline given at the beginning of the semester, pass positive with 60% positive answers.

Auditorium exercises: written test at the last class in the semester, passing a positive test on the basis of giving 65% positive answers.

Design exercises: development and individual defense of the completed project

#### Programme content

Lecture: The specificity of a construction company in the context of the principles of financial management. The goals of the enterprise. Types of the company's financial result and their interpretation. The structure of the company's assets and sources of its financing. Company balance sheet. Cash flow in the enterprise and analysis of the reasons differentiating cash flow from net profit. Discussion of related concepts. The concept of profitability, profitability thresholds and their interpretation (including a graphical interpretation of the value and quantitative break-even point), profitability of capital, profitability of assets, profitability of sales. Operational risk in the context of the quantitative and valuable break-even point. Company liquidity; concepts and basic indicators of liquidity level assessment. Resource utilization rates. Financial risk in the company's operations. Capital structure and methods of financing investment projects. Principles of calculating the cost of capital involved in financing the company's operations. Introduction to creating business plans for new investment projects.



Classes: Introduction to investment effectiveness assessment methods. Preliminary characteristics of selected methods (simple and discounted return period method, NPV method, profitability index method, internal rate of return method, profitability ratio, financial leverage effect). Case study related to the efficiency analysis of a construction investment project. Assessment of the risk of investment projects and the manner of its recognition in the efficiency account. General principles of building life cycle costing (LCC).

### Teaching methods

1. Lecture: multimedia presentation, illustrated with examples given on the blackboard
2. Auditorium exercises: presentation of tasks with examples given on the blackboard and execution of tasks given by the teacher - practical exercises
3. Design exercises: presentation of the project scope illustrated with short examples and implementation of the project provided by the teacher - practical exercise

### Bibliography

#### Basic

1. Samuelson W.F, Marks S. G., *Ekonomia menedżerska*, PWE, Warszawa 2009
2. Rogowski W., *Rachunek efektywności inwestycji*, Oficyna Wolters Kluwer business, Warszawa 2013
2. Duraj J., *Podstawy ekonomiki przedsiębiorstwa*, PWE, Warszawa 2004
3. Paczuła C., *Rachunkowość przedsiębiorstwa budowlano-montażowego*, PCB, Warszawa 2001
4. Ostrowska E., *Ryzyko projektów inwestycyjnych*, PWE, Warszawa 2002
5. Gawron H., *Metody oceny opłacalności inwestycji na rynku nieruchomości*, Wyd. UE w Poznaniu, Poznań 2011

#### Additional

1. Żywica R., Meszek W., Żywica A., *Organizacja procesu inwestycyjnego*, Wyd. PP, Poznań 2003
2. Skudlik M., *Planowanie i ocena rentowności przedsięwzięcia*, Wydawnictwo Helion, Gliwice 2013
3. Jakubczyc J., *Metody oceny projektu gospodarczego*, PWN, Warszawa 2008



### Breakdown of average student's workload

	Hours	ECTS
Total workload	125	5,0
Classes requiring direct contact with the teacher	75	3,5
Student's own work (literature studies, preparation for projects, preparation for tests/exam, project preparation) <sup>1</sup>	50	1,5

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