



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Construction Technology

Course

Field of study

Construction

Area of study (specialization)

Construction Engineering and Management

Level of study

Second-cycle studies

Form of study

full-time

Year/Semester

1/2

Profile of study

general academic

Course offered in

english

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

15

Other (e.g. online)

Tutorials

30

Projects/seminars

15

Number of credit points

4

Lecturers

Responsible for the course/lecturer:

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Wydział Inżynierii Lądowej i Transportu

ul. Piotrowo 5, 60-965 Poznań

Responsible for the course/lecturer:

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Prerequisites

The student has basic knowledge of the basics of construction; The student is able to obtain information from the indicated sources and analyze engineering activities undertaken; The student is aware of the need to constantly update and supplement construction knowledge and take responsibility in professional work; The student is aware of the issues related to technology in construction.

Course objective

Learning and expanding knowledge of the basic principles of construction technology, in terms of the implementation of a construction project. Sensitizing the student to the practical aspects of technology and performance in construction.



Course-related learning outcomes

Knowledge

Has in-depth knowledge of the impact of construction investments on the environment and understands the need to implement sustainable development principles.

Has advanced detailed knowledge on issues of strength of materials, modeling of materials and structures.

Knows the in-depth principles of creating quality management procedures for construction projects; has knowledge about the efficiency, costs and duration of construction projects in conditions of risk and uncertainty.

Skills

1. Is able to perform a preliminary economic analysis of the proposed solutions and undertaken engineering activities, knows how to prepare a cost estimate, manage construction processes, set out the duties and tasks of investor and building supervision.

2. Is able, in accordance with scientific principles, using scientific workshop to formulate and test hypotheses related to simple research problems, leading to the solution of engineering, technological and organizational problems arising in construction; can prepare studies preparing him for undertaking scientific work

3. Is able to assess the risks in the implementation of construction projects and the operation of buildings, implement appropriate safety principles and develop labor norms and norms as well as quality management procedures.

Social competences

1. Is aware of the need for sustainable development in construction.

2. Understands the need to provide the public with knowledge about construction, conveys this knowledge in a generally understandable way.

3. Is ready to think and act in an entrepreneurial manner.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

As a form of measuring / assessing student work, a final test is carried out (during the last class)

Grade scale determined% from:

90 very good (A)

85 good plus (B)

75 good (C)

65 sufficient plus (D)



55 satisfactory (E)

below 54 insufficient (F)

As part of the exercise, technologies will be presented and students will develop a project for a selected technology of works.

Programme content

Lecture 1 - Introduction

Lecture 2 - Technologies in construction

Lecture 3 - Technologies in construction II

Lecture 4 - Technologies in construction III

Lecture 5 - Examples of technologies in construction

Lecture 6 - Building practice

Lecture 7 - Building practice II

Lecture 8 - Credit

Exercises 1.2 - Introduction

Classes 3.4 - Practical aspects of technology in construction

Classes 5.6 - Practical aspects of technology in construction II

Classes 7.8 - Practical aspects of technology in construction III

Classes 9,10 - Practical aspects of technology in construction IV

Classes 11.12 - Practical aspects of technology in construction V

Classes 13.14 - Practical aspects of technology in construction VI

Laboratories 1 - Introduction

Laboratories 2 - The use of technology

Laboratories 3 - The use of technology II

Laboratories 4 - The use of technology III

Laboratories 5 - The use of technology IV

Laboratories 6 - Use of technology - summary

Laboratories 7 - The use of technology - overview



Laboratories 8 - Credit

Project 1 - Introduction

Project 2 - Project overview

Project 3 - Project overview II

Project 4 - Project overview III

Project 5 - Consultation

Project 6 - Consultation II

Project 7 - Consultations III

Project 8 - Credit

Teaching methods

Pyramid discussion; Panel discussion; The classic problem method; Teaching games; Exchange of ideas; Informative lecture; Problem lecture; Conversational lecture; Program text; Work with a book; Talk; Lecture reading; Demonstration method; Laboratory method; Production exercise method; Method of experiments; Observation and measurement method; Project method; Leading text method; Workshop method; Show.

Bibliography

Basic

1. Skibniewski, M. J., & Chao, L. C. (1992). Evaluation of advanced construction technology with AHP method. *Journal of Construction Engineering and Management*, 118(3), 577-593.
2. Nam, C. H., & Tatum, C. B. (1988). Major characteristics of constructed products and resulting limitations of construction technology. *Construction management and economics*, 6(2), 133-147.
3. Ofori, G. (1994). Construction industry development: role of technology transfer. *Construction Management and Economics*, 12(5), 379-392.

Additional

1. Chudley, R., & Greeno, R. (2005). *Construction technology*. Pearson Education.
2. Ioannou, P. G., & Liu, L. Y. (1993). Advanced construction technology system—ACTS. *Journal of Construction Engineering and Management*, 119(2), 288-306.
3. Skibniewski, M. J. (1999). A neuro-fuzzy computational approach to constructability knowledge acquisition for construction technology evaluation. *Automation in construction*, 8(5), 539-552.



Breakdown of average student's workload

	Hours	ECTS
Total workload	120	4,0
Classes requiring direct contact with the teacher	75	2,5
Student's own work (literature studies, preparation for laboratory classes / exercises, preparation for tests / exam, project implementation) ¹	45	1,5

¹ delete or add other activities as appropriate