COURSE DESCRIPTION CARD - SYLLABUS

Course name

Technology and management of works

Course

Field of study

Environmental Engineering

Year/Semester

3 / 6

Area of study (specialization)

-

Profile of study

general academic

Level of study

First-cycle studies

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

30

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

15

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

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Faculty of Civil and Transport Engineering

Piotrowo 5, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

The student knows the basics of general construction.

The student is able to obtain information from literature, databases and other properly selected information sources in the area of environmental engineering. The student can integrate, interpret and evaluate the obtained information.

Awareness of the need to constantly update and supplement knowledge and skills.

Course objective

The course aims at acquainting students with basic knowledge in technology of construction works, methods of planning and organisation of the construction process, scheduling and costing of works.

Course-related learning outcomes

Knowledge

1. The student has basic knowledge in the field of building engineering concerning technology and organisation of works suitable to formulate and solve simple tasks in environmental engineering - [KIS_W01] [KIS_W02]

2. The student knows basic methods, techniques and tools for planning and controlling the course of works and planning mechanisation of works - [KIS_W07]

3. The student knows basic methods of cost and price calculation and tools for costing works - [KIS_W07]

Skills

1. The student is able to perform preliminary economic analysis of engineering activities - [KIS_U06]

2. The student can choose and apply an appropriate method and tool for planning, scheduling and cost estimation of works - [KIS_U09]

3. The student when formulating and solving engineering tasks, can notice the systemic and non-technical aspects - [KIS_U05]

Social competences

1. The student is aware of non-technical aspects and effects of engineering activity, including its environmental impact - [KIS_K01]

2. The student is aware of responsibility for taking decision - [KIS_K03]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Examination: test or writing assignment on selected issues

Rating scale:

91-100 very good

81-90 good plus

71-80 good

61-70 sufficient plus

51- 60 sufficient

below 50 insufficient

Project: consultations, project defence

Programme content

The specificity of construction processes. The principles of organisation. The cycle of organised activity. Research, measurement and standardisation of work. Methods of the organisation of construction processes. The line of balance (LOB) method. Comprehensive mechanisation method of construction processes. Introduction to planning and scheduling of construction works. Construction schedules, types of schedules, rules of scheduling. Network methods of planning the course of works. Introduction to technology and work organisation. Technology and organisation of earthworks, transport and assembly works. Rules of selecting tools, machines and equipment to perform construction works. Calculating the efficiency of machines, equipment and cooperating constrcution crews. Methods of cost estimation, types of cost estimates, rules of preparing a cost estimate.

Project: Development of technology and organisation for the indicated scope of works, preparing a cost estimate

Teaching methods

Lecture: Informative, problem lecture, lecture with multimedia presentation

Project: project work in teams, consultations, project defence

Bibliography

Basic

Jaworski K.M.: Podstawy organizacji budowy. Wydawnictwo Naukowe PWN, Warszawa 2012

Kubica J.: Technologia robót budowlanych, Wydawnictwo Politechniki Krakowskiej, Kraków 2013

Martinek W., Nowak P., Woyciechowski P.: Technologia robót budowlanych. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2010

Pisarska E., Połoński M.: Elementy organizacji robót inżynierskich. Wydawnictwo SGGW, Warszawa 2000

Kowalczyk Z., Zabielski J.: Kosztorysowanie i normowanie w budownictwie. WSiP, Warszawa 2011

Polskie standardy kosztorysowania robót budowlanych. Wydawnictwo Stowarzyszenie Kosztorysantów Budowlanych, Warszawa 2005

Additional

Dyżewski A.: Technologia i organizacja budowy, Tom 1 i 2. Arkady, Warszawa 1989/1990.

Maj T.: Organizacja budowy. WSiP, Warszawa 2007

Martinek W., Książek M., Jackiewicz-Rek W.: Technologia robót budowlanych – ćwiczenia projektowe. Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2007

Nowy poradnik majstra budowlanego. Red. Panas J. Arkady, Warszawa 2012

Plebankiewicz E.: Podstawy kosztorysowania robót budowlanych. Wydawnictwo Politechniki Krakowskiej, Kraków 2007

Smoktunowicz E.: Kosztorysowanie obiektów i robót budowlanych. Polcen, Warszawa 2001

Weiss I., Jurga R.: Inwestycje budowlane. Wydawnictwo C.H. Beck, Warszawa 2005

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	45	1,5
Student's own work (literature studies, preparation for exam, project preparation)[1]	30	1,5

[1] delete or add other activities as appropriate