1. Course number and name

RB-S1-19-W3D-8E, **Construction Technology, Organization and Economics II**

2. Credits and contact hours*

2 ECTS, lectures: 30 hours**, classes: 5 hours**, laboratory: 5 hours** project: 20 hours**

3. Instructor's or course coordinator's name

Tomasz Ponikiewski PhD, DSc/University Professor

4. Text book, title, author, and year

- Roy Chudley, Construction Technology, ISBN 9780131286429
- Mike Rile, Alison Cotgrave, Construction technology 1 House Construction, ISBN 978-0-230-20362-4
- Robert L. Peurifoy, Garold D. Oberlender, Formwork for concrete structures, 4th edition, McGraw-Hill
- Frank Harris, Ronald McCaffer, Modern Construction Management, Blackwell Publishing
- O'Brien E.J., Dixon A.S.: Reinforced and Prestressed Concrete Design – The Complete Process, Longman Scientific & Technical

a. other supplemental materials

- Chew Yit Lin, Technology for Tall Buildings, ISBN-13 978-981-281-861-4
- Mike Rile, Alison Cotgrave, Construction technology 2 Industrial and Commercial Building, ISBN 978-0-230-57571-4
- FIDIC, Conditions of Contract for Construction, ISBN: 83-86774-30-4

5. Specific course information

a. brief description of the content of the course (catalog description)

Lectures: "Item is covered by the requirements of the Standard. Purpose of training to familiarize with issues of technology works. The exercise will be carried out calculations of design technology. Item is covered by the requirements of the Standard. Purpose of training to familiarize with issues of technology and economics works construction.
The training project will be carried out technological calculations and cost calculations."
Classes: Exercise of traditional construction technology (based on the construction of small-sized components). Prefabricated construction technology (Editor successive elements integrated assembly of elements, etc.). Monolithic construction technology (formwork floating and sliding). Building Investmen Process- definitions, phases, stages, activities. Participants of Investmen Process- their licence and duties. Methods and system of building cost calculation. Metodology and systems of realisation cost calculation. The roles and funcions of cost calculation.
Laboratory: Graphic and mathematics planning methods in MS-Project regarding the project.
Project: 1. Details cost calculation for chosen building object: constracting's processes, bill of quantity. 2. The balance of soil. Two variants earthworks projects. 3. Formworks project for walls.

b. prerequisites or co-requisites

No prerequisites and additional requirements

c. indicate whether a required, elective, or selected elective (as per Table 5-1) course in the program

Required.

6. Specific goals for the course

a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic

The student can: (1) formulate, and solve engineering problems in the selection of the technology of construction; (2) Put technology to develop, perform simple and complex processes of building construction; (3) develop the technical specifications and performance Safety Works and in accordance with standards, technical conditions and building regulations.

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

K1A_W09, K1A_W10, K1A_U08; K1A_U09; K1A_U11

7. Brief list of topics to be covered

- General aspects of technology. Construction of transport technology. Preparation of construction sites.
- Technology earthworks. Technology erection works. Manufacturability building solutions.
- Manufacturability requirements for building solutions. Criteria for assessing manufacturability building solutions (examples).
- The specificity of the implementation of the construction works due to the technology of their climb. The essence of the problem of individual character of each building.
- Manufacturability analysis system selection and execution solutions.
- Introduction to the optimal technological and organizational solutions. Types and structure of the technological and organizational building process. Simple and complex processes.
- Technological networks. Division and characteristics of the core technologies climb buildings.
- Traditional construction technology (based on the construction of small-sized components).
- Prefabricated construction technology (Editor successive elements integrated assembly of elements, etc.). Monolithic construction technology (formwork floating and sliding). Building Investmen Process- definitions, phases, stages, activities. Participants of Investmen Process- their licence and duties. Methods and system of building cost calculation. Metodology and systems of realisation cost calculation.The roles and funcions of cost calculation.

*- Consultations were not included in the contact hours

**-per semester