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Name of the module/subject Technology and management of works Technology and management of works First-dot study Environmental Engineering Extramural First- Elective path/specialty -  Subject offered in:			STUDY MODULE D	ESCRIPTION FORM				
Project of study   Profise of study   Profise of study   Subject offered in:   Course (compulsory, elective)   Subject offered in:   Course (compulsory, elective)   Obligatory   Profise   Subject offered in:   Course (compulsory, elective)   Obligatory   Profise	Name of the module/subject			Code				
Elective path/specialty - Subject offered in: - Subject offered in: - Polish - Polis				Profile of study				
Elective path/specialty  First-cycle studies  First-cycle studies  Form of study (full-time,part-time)  Part-time  Part-time  No. of credits  Don'd fredits  No. of credits  Part-time  No. of credits  Part-time  No. of credits  Lecture: 20 Classes: - Laboratory: - Project/seminars: 10 4  Status of the course in the study program (Basic, major, other) (brak)  Education areas and fields of science and art  technical sciences  Responsible for subject / lecturer:  dr in2. Pawel Szymański ernali: emait: pawels. szymański@put.poznan.pl tel. tel. efi 665 21 91 Faculty of Civil and Environmental Engineering Piotrowo 5, 60-965 Poznań  Prerequisites in terms of knowledge, skills and social competencies:  Responsible for subject / lecturer:  dr in2. Pawel Szymański ernali: emait: pawels. szymański@put.poznan.pl tel. tel. efi 665 21 91 Faculty of Civil and Environmental Engineering Piotrowo 5, 60-965 Poznań  Prerequisites in terms of knowledge, skills and social competencies:  Responsible for subject / lecturer:  dr in2. Pawel Szymański ernali: emait: pawels. szymański ernali: emait: p	Env	ironmental Engin	neering Extramural First-	· · · · · · · · · · · · · · · · · · ·	3/6			
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technical sciences  Responsible for subject / lecturer:  dr inż. Paweł Szymański email: enail: pawel.s.szymański@put.poznan.pl tel. tel. 61 665 21 91 Faculty of Civil and Environmental Engineering Piotrowo 5, 60-965 Poznań  Prerequisites in terms of knowledge, skills and social competencies:    Knowledge	Status			, , ,				
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dr inż. Paweł Szymański email: email: pawel.s.szymanski@put.poznan.pl tel. tel. 61 665 21 91 Faculty of Civil and Environmental Engineering Piotrowo 5, 60-965 Poznań Prerequisites in terms of knowledge, skills and social competencies:    Knowledge	techi	nical sciences			4 100%			
email: email: pawel.s.szymanski@put.poznan.pl tel. tel. 61 665 21 91 Faculty of Civil and Environmental Engineering Plotrowo 5, 60-965 Poznań  Prerequisites in terms of knowledge, skills and social competencies:    Responsibility for the accuracy of the results of one?s work   Skills	Resp	onsible for subj	ect / lecturer:	Responsible for subjec	t / lecturer:			
tel. 61 665 21 91 Faculty of Civil and Environmental Engineering Piotrowo 5, 60-965 Poznań  Prerequisites in terms of knowledge, skills and social competencies:    Knowledge	dr i	nż. Paweł Szymański		dr inż. Elżbieta Borucka				
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3. Student can develop a cost estimate for the selected scope of works - [[K_U01, K_U02, K_U12]]  Social competencies:								
Social competencies:								
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1. Student is able to determine priorities for the task realization - [[K_K04]]	·							
O Observation are adding a decay of the property of the proper					III KOAN			
<ol> <li>Student is aware of the need for advancing qualifications and updating knowledge acquired - [[K_K01]]</li> <li>Student understands the importance of organization and management issues in the engineering domain - [[K_K02]]</li> </ol>								

# Assessment methods of study outcomes

## Faculty of Civil and Environmental Engineering

written exam: 60 minutes test

Rating scale: 91-100 very good 81-90 good plus 71-80 good

61-70 dostateczna plus sufficient plus

51- 60 sufficient below 50 insufficient

project: technology, organization and evaluation of the indicated range of installation works

### **Course description**

Specificity of the construction industry. Division of construction processes. Organizational principles. Construction work measurement and standardization. Teamwork. Equipment and team work productivity. Work organization methods. Fundamental assumptions of the Line-Of-Balance method. Construction schedules, types and principles of drawing up. Network methods of planning the course of construction work. Comprehensive mechanization of work. Preparatory and earthworks thechnology. Technology and organization of the implementation of external networks. Aspects of the construction site layout planning. Methods and types of estimates. Basics of developing an estimate. Principles of calculating costs and price.

## Basic bibliography:

- 1. Jaworski K.M., Podstawy organizacji budowy, Wydawnictwo Naukowe PWN, Warszawa, 2004
- 2. Martinek W., Nowak P., Woyciechowski P., Technologia robót budowlanych, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2010
- 3. Pisarska E., Połoński M. Elementy organizacji robót inżynierskich, Wydawnictwo SGGW, Warszawa 2000
- 4. Smoktunowicz E.; Kosztorysowanie obiektów i robót budowlanych, Polcen, Warszawa 2001

### Additional bibliography:

- 1. Dyżewski A., Technologia i organizacja budowy, Arkady, Warszawa, 1990
- 2. Zajączkowska.T. Kalkulacja kosztorysowa i jej komputerowe wspomaganie, Zamex, Kraków 2002

## Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	20
2. Participation in exercises	10
3. Preparation of the project	20
4. Prepare to pass lectures	20

### Student's workload

Source of workload	hours	ECTS			
Total workload	70	4			
Contact hours	30	3			
Practical activities	10	1			