

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Technology and management of works		Code 1010101261010114642
Field of study Environmental Engineering First-cycle Studies	Profile of study (general academic, practical) general academic	Year /Semester 3 / 6
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 30 Classes: - Laboratory: - Project/seminars: 15		No. of credits 4
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 4 100%
Responsible for subject / lecturer: dr inż. Magdalena Hajdasz email: magdalena.hajdasz@put.poznan.pl tel. 61 665 21 91 Faculty of Civil and Environmental Engineering Piotrowo 5, 60-965 Poznań		Responsible for subject / lecturer: dr inż. Marcin Gajzler email: marcin.gajzler@put.poznan.pl tel. 61 665 21 90 Faculty of Civil and Environmental Engineering Piotrowo 5, 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of building materials, construction, installation design
2	Skills	Obtaining information from the literature on the subject Skills in analysing engineering activities
3	Social competencies	Workteam skills Responsibility for the accuracy of the results of one's work
Assumptions and objectives of the course: Understanding the basics in technology and organization of works and cost calculation. To provide students with skills in developing schedules and cost estimates of works.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Basics of technology and mechanization of works - [[K_W07, K_W09]] 2. Knowledge of principles and methods for the work organization and planning - [[K_W07, K_W09]] 3. Understanding of cost calculation methods and conducting estimates rules - [[K_W07, K_W09]]		
Skills:		
1. Student can apply appropriate methods for works realization under specific conditions - [[K_U01, K_U02, K_U16]] 2. Student can plan and control the work process by means of scheduling and network methods - [[K_U01, K_U02, K_U16]] 3. Student can develop a cost estimate for the selected scope of works - [[K_U01, K_U02, K_U12]]		
Social competencies:		
1. Student is able to determine priorities for the task realization - [[K_K04]] 2. Student is aware of the need for advancing qualifications and updating knowledge acquired - [[K_K01]] 3. Student understands the importance of organization and management issues in the engineering domain - [[K_K02]]		
Assessment methods of study outcomes		

<p>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</p>		
Course description		
<p>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.</p> <p>Teaching methods: Lecture: informative lecture, problem lecture, lecture with multimedia presentation Project: project design, team work, discussion</p>		
Basic bibliography:		
<ol style="list-style-type: none"> Jaworski K.M., Podstawy organizacji budowy, Wydawnictwo Naukowe PWN, Warszawa, 20017 (wznowienie) Martinek W., Nowak P., Woyciechowski P., Technologia robót budowlanych, Oficyna Wydawnicza Politechniki Warszawskiej, Waszawa 2010 Pisarska E., Poloński M. Elementy organizacji robót inżynierskich, Wydawnictwo SGGW, Warszawa 2000 Smoktunowicz E.; Kosztorysowanie obiektów i robót budowlanych, Polcen, Warszawa 2001 Polskie standardy kosztorysowania robót budowlanych. Wyd. Stowarzyszenie Kosztorysantów Budowlanych, Warszawa, 2005 		
Additional bibliography:		
<ol style="list-style-type: none"> Dyżewski A., Technologia i organizacja budowy, Arkady, Warszawa, 1990 Józef Kubica, Technologia robót budowlanych, Wydawnictwo PK, 2013 Zajączkowska.T. Kalkulacja kosztorysowa i jej komputerowe wspomaganie, Zamex, Kraków 2002 Werner W.A., Proces inwestycyjny w budownictwie, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2000 Dziadosz A., Gajzler M., Kończak A., Transport w kalkulacji kosztorysowej robót budowlanych, Logistyka 6/2014, s. 14173-14180 Hajdasz M., Managing repetitive construction in a dynamically changing project environment: Conceptualizing the system?model?simulator nexus, Automation in construction, 2015, s. 132-145 		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in lectures	30	
2. Participation in exercises	30	
3. Preparation of the project	20	
4. Prepare to pass lectures	20	
Student's workload		
Source of workload	hours	ECTS
Total workload	100	4
Contact hours	60	2
Practical activities	40	1