

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Construction Engineering and Management</b>		Code <b>1010102231010110144</b>
Field of study <b>Environmental Engineering Second-cycle</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>2 / 3</b>
Elective path/specialty <b>Heating, Air Conditioning and Air Protection</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>Second-cycle studies</b>	Form of study (full-time, part-time) <b>full-time</b>	
No. of hours Lecture: <b>15</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>15</b>		No. of credits <b>2</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>2 100%</b> <b>2 100%</b>
<b>Responsible for subject / lecturer:</b>  dr inż. Magdalena Hajdasz email: email: magdalena.hajdasz@put.poznan.pl tel. tel. 61 665 21 91 Faculty of Civil and Environmental Engineering Piotrowo 5, 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Basic knowledge of building materials, technology and organisation of the construction process
2	<b>Skills</b>	Skills in obtaining information from the literature on the subject Skills in analysing engineering activities
3	<b>Social competencies</b>	Workteam skills Responsibility for the accuracy of the results of one's own work
<b>Assumptions and objectives of the course:</b> Understanding the structure of the investment process, basics of organisation and management in construction. Obtaining skills in scheduling, developing network models and of site layout planning.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Familiarity with the structure, rights and obligations of the participants involved in the investment process - [[K2_W08]]		
2. Knowledge of the planning and construction organization basics - [-[K2_W08, K2_W09]]		
3. Knowledge of the construction documentation - [[K2_W08] ]		
<b>Skills:</b>		
1. Student can specify the structure of the investment process, knows rights and obligations of the participants involved in the construction process - [K2_U01, K2_U02, K2_U05]]		
2. Student can develop a construction schedule and network model, estimate the resources in terms of time-cost, can provide alternative solutions - [K2_U01, K2_U02, K2_U05, K2_U09, K2_U10, K2_U17]]		
3. Student knows how to develop a concept of the construction site management by taking into account the conditions during the implementation phase - [[K2_U01, K2_U02, K2_U05, K2_U10, K2_U17]]		
<b>Social competencies:</b>		
1. Student is aware of the significance and understands the non-technical aspects and outcomes of engineering activities - [[K2_K02]]		
2. Student can properly determine priorities for the specific task realization - [[K2_K04]]		
3. Student recognises the need for a systematic development of competences and engineering knowledge - [[K2_K01]]		

<b>Assessment methods of study outcomes</b>		
<p>Written exam: 60 minutes test, activity            Presentation            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: developing a concept of the construction site management</p>		
<b>Course description</b>		
<p>Investment process organization. Stages of the investment process. Participants of the investment process and the scope of their duties. Introduction to the theory of organization and management. Schedules and network planning in construction management. Construction management taking into account the construction processes dynamics and variable environmental conditions. Time-cost analysis. Organizational structure. Project delivery systems. Construction site management and construction site layout planning. Human resource management in construction.            Project: The concept of organisation of complex construction tasks</p> <p>Teaching methods:            Lecture: informative lecture, problem lecture, lecture with multimedia presentation            Project: project design, team work, discussion</p>		
<b>Basic bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Jaworski K.M., Metodologia projektowania realizacji budowy, Wydawnictwo Naukowe PWN, Warszawa 2009</li> <li>2. Robbins.S.P., De Cenzo D.A., Podstawy Zarządzania, Polskie Wydawnictwo Ekonomiczne, Warszawa, 2002</li> <li>3. Meszek W., Żywica R., Żywica A., Organizacja procesu inwestycyjnego. Politechnika Poznańska 2003</li> <li>4. Rak A., Budowlane przedsięwzięcie inwestycyjne, PWN, Warszawa 2014</li> </ol>		
<b>Additional bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Dyżewski A., Technologia i organizacja budowy, Arkady, Warszawa, 1990</li> <li>2. Werner W., Zarządzanie w procesie inwestycyjnym, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2008</li> <li>3. Eaton D., Zarządzanie zasobami ludzkimi, Wydawnictwo Poltex, Warszawa 2009</li> <li>4. Hajdasz M., Flexible management of repetitive construction processes by an intelligent support system, Expert Systems with Applications, 2014, s. 962-973</li> </ol>		
<b>Result of average student's workload</b>		
Activity	Time (working hours)	
1. Participation in lectures	15	
2. Participation in exercises	15	
3. Preparation of the project	10	
4. Prepare to pass lectures	10	
<b>Student's workload</b>		
Source of workload	hours	ECTS
Total workload	50	2
Contact hours	30	1
Practical activities	20	1