

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Optional CAD</b>		Code <b>1010101231010130660</b>
Field of study <b>Environmental Engineering First-cycle Studies</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>2 / 3</b>
Elective path/specialty <b>-</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-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>15</b> Project/seminars: <b>-</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. Fabian Cybichowski email: fabian.cybichowski@put.poznan.pl tel. 61 665 24 14 Wydział Budownictwa i Inżynierii Środowiska ul. Piotrowo 5 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Knowledge about Excel, level intermediate.
2	<b>Skills</b>	Ability to work with personal computer, including Excel.
3	<b>Social competencies</b>	Awareness of the need to continually update and supplement one's knowledge and skills.
<b>Assumptions and objectives of the course:</b> Familiarize students with advanced Excel, in particular with the VBA addition.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Student has basic programming skills concerning Visual Basic - [K_W07] 2. Student knows how to create and use macros in Excel - [K_W07] 3. Student knows how to create and use interactive formants - [K_W07] 4. Students knows the basics of programming in VBA extension for Excel - [K_W07]		
<b>Skills:</b>		
1. Basic programming skills in Visual Basic - [K_U02, K_U07, K_U09] 2. The student can write user functions in Excel VBA - [K_U02, K_U07, K_U09] 3. Student is able to create forms and interactive elements in Excel spreadsheet - [K_U02, K_U07, K_U09]		
<b>Social competencies:</b>		
1. The student is aware of the value of information and knowledge - [[K_K07]		
<b>Assessment methods of study outcomes</b>		
Podstawowy sposób sprawdzania efektów kształcenia: w ramach wykładu sprawdzian pisemny - test wielokrotnego wyboru przeprowadzany na ostatnich zajęciach, w ramach ćwiczeń laboratoryjnych ? kolokwium na ostatnich zajęciach.		

<b>Course description</b>		
Basic method for checking the effects of education: (lecture) multiple choice test performed on the last class, (laboratory exercises) ability test performed on the last class.		
<b>Basic bibliography:</b>		
1. John Walkenbach, Excel 2013 PL. Programowanie w VBA dla bystrzaków. Wydawnictwo Helion.		
2. John Walkenbach, Excel 2013 PL. Programowanie w VBA. Vademecum Walkenbacha. Wydawnictwo Helion.		
<b>Additional bibliography:</b>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Lectures	15	
2. Laboratory classes	15	
3. Preparation for laboratory classes	10	
4. Preparation for final tests	5	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	45	2
Contact hours	30	2
Practical activities	15	1