

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Engineering Drawing and CAD		Code 1010101111010104899
Field of study Sustainable Building Engineering First-cycle	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 1
Elective path/specialty -	Subject offered in: English	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: - Classes: - Laboratory: 30 Project/seminars: 30		No. of credits 4
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 4 100%
Responsible for subject / lecturer: dr inż. Krzysztof Szajek email: krzysztof.szajek@put.poznan.pl tel. 061 6652103 Civil and Environmental Engineering ul. Piotrowo 5, 60-965 Poznań		Responsible for subject / lecturer: dr inż. Krzysztof Szajek email: krzysztof.szajek@put.poznan.pl tel. 061 6652103 Civil and Environmental Engineering ul. Piotrowo 5, 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Fundamentals of geometry and descriptive geometry.
2	Skills	Ability to gain information from recommended sources.
3	Social competencies	Understanding the necessity of constant actualisation and complementation of knowledge. Readiness to undertake co-operation within a team.
Assumptions and objectives of the course: -Obtaining the ability to execute architectural and building drawings as well as the ability to read information from archival drawings.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. knows the principles of descriptive geometry and technical drawing for creation and reading of architectural drawings, plan drawings and geodesic maps as well as methods of making them in a conventional fashion and with BIM technology software (Building Information Modelling) - [W01 KSB_W02]		
Skills: 1. has a diversity of skills to carry out design tasks such as work in the area of sustainable building engineering including technical skills such as conventional techniques (hand drawing), specialist design software packages (of CAD type) and specialist software in BIM technology - [U01 KSB_U27]		
Social competencies: 1. takes responsibility for reliability of results and their - [K01 KSB_K02]		
Assessment methods of study outcomes		

<p>-Evaluation of lectures Not applicable - Exercise evaluation Not applicable - Evaluation of projects</p> <p>As part of the projects, the student performs construction and building drawings of a detached house (horizontal and vertical projection). Drawings are evaluated in the context of:</p> <ul style="list-style-type: none"> - correctness of using the standard principles of technical drawing, - proper selection and use of the CAD environment tool (including layers, blocks, etc.), - proper presentation of structural and architectural elements, - readability, consistency and aesthetics. <p>The credit is obtained from a minimum of 50% of the maximum number of points. Evaluation criteria: 100% -91% -5.0; 90% -81% -4.5; 80% -71% -4.0; 70% -61% -3.5; 60% -51% -3.0; less than 50% -2.0</p> <p>- Laboratory assessment</p> <p>Completing the laboratory is based on the evaluation of independent work in the AutoCad / QCad environment. The student has the task of making a few simple drawings. The knowledge and ability to apply the tools presented during the course is assessed.</p> <p>The credit is obtained from a minimum of 50% of the maximum number of points. Evaluation criteria: 100% -91% -5.0; 90% -81% -4.5; 80% -71% -4.0; 70% -61% -3.5; 60% -51% -3.0; less than 50% -2.0</p>	
Course description	
<p>-Laboratories: demonstration, laboratory, experiments, workshop - Projects: exercise, project.</p>	
<p>Basic bibliography:</p> <ol style="list-style-type: none"> 1. ISO 6707-1:2004 Building and civil engineering -- Vocabulary -- Part 1: General terms 2. EN ISO 5457:1999 Technical product documentation ? Sizes and layout of drawing sheets 3. EN ISO 128-23:1999 Technical drawings ? General principles of presentation ? Part 23: Lines on construction drawings 4. EN ISO 3098-0:1997 Technical product documentation -- Lettering -- Part 0: General requirements 5. PN-B01030:2000 Rysunek budowlany. Oznaczenia graficzne materiałów budowlanych 6. PN-B-01025:2004 Rysunek budowlany. Oznaczenia graficzne na rysunkach architektoniczno-budowlanych 7. ISO 7518:1983 Technical drawings -- Construction drawings -- Simplified representation of demolition and rebuilding 8. PN-B-01029:2000 Rysunek budowlany. Zasady wymiarowania na rysunkach architektoniczno-budowlanych 9. ISO 129:2018 Technical product documentation (TPD) ? Presentation of dimensions and tolerances ? Part 1: General principles 10. Rysunek techniczny budowlany - E. Miśniakiewicz, W. Skowroński, Warszawa, Arkady 2007 11. Rysunek techniczny w budownictwie - J. Bieniasz, B. Januszewski, M. Piekarski, Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2009 12. PN-B-01040:1994 Rysunek konstrukcyjny budowlany. Zasady ogólne 13. PN-B-01042:1999 Rysunek konstrukcyjny budowlany. Konstrukcje drewniane. 14. EN ISO 3766:2003 Construction drawings -- Simplified representation of concrete reinforcement 15. ISO 4066:1994 Construction drawings -- Bar scheduling 16. EN ISO 5261:1995 Technical drawings -- Simplified representation of bars and profile sections 17. PN-ISO 2552:1997 Rysunek techniczny. Połączenia spawane, zgrzewane i lutowane. Umowne przedstawianie na rysunkach. 18. PN-B-01027:2002 Rysunek budowlany. Oznaczenia graficzne stosowane w projektach zagospodarowania działki i terenu 19. PN-B-01029:2000 Rysunek budowlany. Zasady wymiarowania na rysunkach architektoniczno-budowlanych 20. Rysunek techniczny budowlany. E. Miśniakiewicz, W. Skowroński, Arkady, Warszawa 2007 21. Rysunek techniczny w budownictwie. J. Bieniasz, B. Januszewski, M. Piekarski, Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów 2009 	
<p>Additional bibliography:</p> <ol style="list-style-type: none"> 1. EN ISO 5455:1979 Technical drawings -- Scales 2. PN-ISO 128-30:2006 Rysunek techniczny. Zasady ogólne przedstawiania. Część 30: Wymagania podstawowe dotyczące rzutów 3. EN ISO 5456-1,2,3:2002 Technical drawings ? Projection methods 4. PN-ISO 128-30:2006 Rysunek techniczny. Zasady ogólne przedstawiania. Część 30: Wymagania podstawowe dotyczące rzutów 	
Result of average student's workload	
Activity	Time (working hours)

1. Participation in laboratory exercises	30	
2. Participation in design exercises	30	
3. Consultations related to the educational process	10	
4. Preparation for passing the tutorial exercises (colloquium)	10	
5. Preparation of drawing works at home	15	
6. Preparation for laboratories	10	
Student's workload		
Source of workload	hours	ECTS
Total workload	105	4
Contact hours	70	3
Practical activities	60	0