

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject (-)		Code 1010102121010109371
Field of study Civil Engineering Second-cycle Studies	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 2
Elective path/specialty Structural Engineering	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 15 Classes: - Laboratory: - Project/seminars: 15		No. of credits 2
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 Technical sciences		ECTS distribution (number and %) 2 100% 2 100%
Responsible for subject / lecturer: dr hab. inż. Katarzyna Rzeszut email: katarzyna.rzeszut.@put.poznan.pl tel. 061 665 2097 Faculty of Civil and Environmental Engineering Piotrowo 5 Street,60-965 Poznań		Responsible for subject / lecturer: dr hab. inż. Katarzyna Rzeszut email: katarzyna.rzeszut.@put.poznan.pl tel. 061 665 2097 Faculty of Civil and Environmental Engineering Piotrowo 5 Street,60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	- basic knowledge of strength of materials, structural analysis, construction materials, descriptive geometry, construction
2	Skills	- obtaining information from the standards and books - use of the computer programs which support designing
3	Social competencies	- responsibility - desire to expand knowledge
Assumptions and objectives of the course: Student can design simple steel elements which are tensile, compressed or bending. Student can design welding and bolted joints.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Know the rules of general design of construction - [K_W04] 2. Know the rules of design simple metal elements - [K_W07]		
Skills:		
1. Can combine the loads of buldings - [K_U02] 2. Can design selected metal elements - [K_U07] 3. Can determine the dimension of basic structural elements - [K_U08]		
Social competencies:		
1. Can work independently and in a team - [K_K01] 2. Student is responsible for the obtained results - [K_K02]		
Assessment methods of study outcomes		
Written exam at the end of course in the summer session. Pass of exercises based on the results of two tests (welding and bolted joints). Pass a project based on the project documentation, systematic work, talk about project.		
Course description		

The basic information about: production technology, strength, mechanical properties of steel which is used for structural elements of thin-walled structures The basic methods of designing metal thin-walled structures. The rules of designing welding and bolted joints. The basic information about structural designing, durability of thin-walled structures, loads and thin-walled structural reliability.

Teaching methods

A monographic lecture with a multimedia presentation with elements of a problem-lecture lecture.

Design exercises - practical implementation of an engineering task. Initial discussion of the task, staged preparation of calculations and drawing documentation by students, consultation and approval of work stages, explanation by the teacher of repeated doubts by all the students. The basis for passing is systematically (confirmed entries from consultations) correctly executed project and its defense (oral or written form).

Basic bibliography:

1. PN-EN 1993-1-3 Projektowanie konstrukcji cienkościennych
2. PN-EN 1993-1-3 Projektowanie konstrukcji cienkościennych
3. Bródka Jan, Broniewicz Mirosław, Giżejowski Marian: ?Kształtowniki gięte. Poradnik projektanta?; Wydanie I, Polskie Wydawnictwo techniczne Rzeszów 2006
4. Z. Kurzawa, K. Rzeszut, M. Szumigala, Stalowe Konstrukcje Prętowe cz III wyd. PP 2015

Additional bibliography:

1. Bródka J. Konstrukcje cienkościenne
2. Bródka J. Konstrukcje cienkościenne
3. K. Rzeszut, Stacacność cienkościennych konstrukcji metalowych z luzami i początkowymi imperfekcjami, wyd. PP 2015.
4. PN-B-03207:2003. - dostosowywała ona próbne przepisy europejskie ENV- 1993-1-3:1996 do warunków krajowych

Result of average student's workload

Activity	Time (working hours)	
1. Lecture	15	
2. Exercises	15	
3. Project	15	
4. Prepare to test	10	
5. Calculation at home	5	
Student's workload		
Source of workload	hours	ECTS
Total workload	60	2
Contact hours	30	1
Practical activities	30	1