STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Steel Structures		**1010101151010110073**
Field of study: **Civil Engineering First-cycle Studies**	Profile of study (general academic, practical): **(brak)**	Year /Semester: **3 / 5**
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: **15** Laboratory: **-** Project/seminars: **15**		No. of credits: **6**
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		ECTS distribution (number and %)

Responsible for subject / lecturer:

dr hab. inż. Maciej Szumigała prof. nadzw.
email: maciej.szumigala@put.poznan.pl
tel. 061 665 2401
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. The basic methods of designing metal structures. The rules of designing welding and bolted joints. The basic information about structural designing, durability of structures, loads and structural reliability.

Basic bibliography:

1. PN-EN 1990 Podstawy projektowania konstrukcji
2. PN-EN 1991-1 Oddziaływania na konstrukcje
3. PN-EN 1993-1 Projektowanie konstrukcji stalowych

Additional bibliography:

1. Kurzawa Z., Chybiński M., Projektowanie konstrukcji stalowych, Wydawnictwo PP, Poznań, 2008
2. Kozłowski + zespół, Konstrukcje stalowe. Przykłady obliczeń wg PN-EN 1993-1 cz.1, cz.2.
3. Giżejowski M., Ziółko J., Budownictwo ogólne tom 5, Arkady, Warszawa 2010
4. Goczek J. + zespoł, przyklady obliczeń konstrukcji stalowych, Politechnika Łódzka 2013
5. Bródka J.+ zespol, Projektowanie i obliczanie połączeń i węzłów konstrukcji stalowych, PWT, 2013

Result of average student's workload

Activity	Time (working hours)
1. Lecture	30
2. Exercises	15
3. Project	15
4. Prepare to test	6
5. Calculation at home	24

Student's workload

Source of workload	hours	ECTS
Total workload	150	6
Contact hours	70	3
Practical activities	90	4