

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Steel bridges</b>		Code <b>1010101161010125139</b>
Field of study <b>Civil Engineering First-cycle Studies</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>3 / 6</b>
Elective path/specialty <b>-</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>elective</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>30</b> Classes: <b>15</b> Laboratory: <b>-</b> Project/seminars: <b>15</b>		No. of credits <b>5</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>5 100%</b> <b>5 100%</b>
<b>Responsible for subject / lecturer:</b>  dr hab. inż. Maciej Szumigala prof. nadzw. email: maciej.szumigala@put.poznan.pl tel. 061 665 2401 Faculty of Civil and Environmental Engineering Piotrowo 5 Street, 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	- basic knowledge of strength of materials, structural analysis, construction materials, steel construction
2	<b>Skills</b>	- obtaining information from the standards and books - prepare simple design documentation
3	<b>Social competencies</b>	- responsibility - desire to expand knowledge
<b>Assumptions and objectives of the course:</b> Student can design roof elements (truss, purlin, bracing), simple steel halls. Student know basic information about fire and corrosion protection.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Know the rules of designing simple metal elements - [K_W07] 2. Know the rules of designing selected buildings - [K_W09] 3. Know selected computer programs which are used in designing - [K_W11]		
<b>Skills:</b>		
1. Can define models to computational analyses - [K_U03] 2. Can design selected metal elements - [K_U07] 3. Can determine the dimension of basic structural elements - [K_U08] 4. Can read drawings and prepare design documentation - [K_U14]		
<b>Social competencies:</b>		
1. Can work independently and in a team - [K_K01] - [K_K01] 2. Student is responsible for the obtained results - [K_K02] 3. Student would like to increase the professional qualifications - [K_K06]		
<b>Assessment methods of study outcomes</b>		

Pass a lecture, grading scale: 63-70 A; 56-62,9 B; 49-55,9 C; 42-48,9 D; 35-41,9 E; 0-34,9 F		
Pass a project based on the project documentation, systematic work, talk about project.		
<b>Course description</b>		
The basic information about: elements of steel construction, roof covering, purlins, truss, bracing, hall construction, loads, static schemes of halls, designing halls, fire and corrosion protection.		
<b>Basic bibliography:</b>		
1. PN-EN 1990 Podstawy projektowania konstrukcji		
2. PN-EN 1991-1 Oddziaływania na konstrukcje		
3. PN-EN 1993-1 Projektowanie konstrukcji stalowych		
<b>Additional bibliography:</b>		
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, cz. 3.		
3. Giżejowski M., Ziółko J., Budownictwo ogólne tom 5, Arkady, Warszawa 2010		
4. Goczek J. + zespół, przykłady obliczeń konstrukcji stalowych, Politechnika Łódzka 2013		
5. Bródka J.+ zespół, Projektowanie i obliczanie połączeń i węzłów konstrukcji stalowych, PWT, 2013		
6. Biegus A., Stalowe budynki halowe, Arkady 2003		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Lecture	30	
2. Exercises	30	
3. Prepare to exam	15	
4. Exam	2	
5. Calculation at home	20	
6. Prepare design documentation	20	
7. Consultation	3	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	125	5
Contact hours	60	3
Practical activities	30	2