

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Steel Structures</b>		Code <b>1010101161010111282</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		ECTS distribution (number and %)
<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>		
<p>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.</p> <p>Teaching methods</p> <p>A monographic lecture with a multimedia presentation with elements of a problem-lecture lecture.</p> <p>Auditorium exercises based on the method of demonstration and instruction - presentation and discussion of the computational example in part with the practical participation of students. Credit based on systematic participation in classes and a positive evaluation of the colloquium.</p> <p>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).</p>		
<p><b>Basic bibliography:</b></p> <ol style="list-style-type: none"> <li>1. PN-EN 1990 Podstawy projektowania konstrukcji</li> <li>2. PN-EN 1991-1 Oddziaływania na konstrukcje</li> <li>3. PN-EN 1993-1 Projektowanie konstrukcji stalowych</li> </ol>		
<p><b>Additional bibliography:</b></p> <ol style="list-style-type: none"> <li>1. Kurzawa Z., Chybiński M., Projektowanie konstrukcji stalowych, Wydawnictwo PP, Poznań, 2008</li> <li>2. Kozłowski + zespół, Konstrukcje stalowe. Przykłady obliczeń wg PN-EN 1993-1 cz.1, cz.2, cz. 3.</li> <li>3. Giżejowski M., Ziółko J., Budownictwo ogólne tom 5, Arkady, Warszawa 2010</li> <li>4. Goczek J. + zespół, przykłady obliczeń konstrukcji stalowych, Politechnika Łódzka 2013</li> <li>5. Bródka J.+ zespół, Projektowanie i obliczanie połączeń i węzłów konstrukcji stalowych, PWT, 2013</li> <li>6. Biegus A., Stalowe budynki halowe, Arkady 2003</li> </ol>		
<b>Result of average student's workload</b>		
Activity	Time (working hours)	
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>		
Source of workload	hours	ECTS
Total workload	125	5
Contact hours	60	2
Practical activities	75	3