Name of the module/subject       Steel Structures         Field of study       Profile (gene         Civil Engineering First-cycle Studies       (bra         Elective path/specialty       -         Cycle of study:       Form of stu         First-cycle studies       (univers         No. of hours       Lecture:       22         Classes:       8       Laboratory: -       Project         Status of the course in the study program (Basic, major, other)       (univers       (univers         Christian areas and fields of science and art       technical sciences       (brak)       Education areas and fields of science and art         Responsible for subject / lecturer:         dr in2. Robert Studziński       email: robert.studziński@put.poznan.pl       tel. 0-61 665 2091         Wydział Budownictwa i Inzynierii Środowiska       ul. Piotrowo 5, 60-965 Poznań       Prerequisites in terms of knowledge, skills and social         1       Knowledge       He knows the basic issues of steel technold and mechanical properties. Recognizes and connections and explains the calculation proceed connection so f. adopt appropriate design and technological protection. He can propose a connection sof con adopt appropriate design and technological protection. He can propose a connection sof and explains the calculation protection. He can propose a connection sof metal structures in the area of with construction of the basic methods of designing elements of metal structur				
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-       Form of stu         Form of stu         Form of stu         Form of stu         No. of hours         Lecture: 22 Classes: 8 Laboratory: - Project         Status of the course in the study program (Basic, major, other)         (brak)         Education areas and fields of science and art         technical sciences         Responsible for subject / lecturer:         drint. Robert Studziński         email: robert.studziński         Project         Project Hecknows         Projeco:	ct offered in: Course (compulsory, elective			
Cycle of study:       First-cycle studies         No. of hours       Lecture:       22       Classes:       8       Laboratory:       -       Project         Status of the course in the study program (Basic, major, other)       (univers         (brak)       (brak)         Education areas and fields of science and art         technical sciences         Responsible for subject / lecturer:         dr inż. Robert Studziński         email: robert.studzinski@put.poznan.pl         tel. 0-61 665 2091         Wydział Budownictwa i Inzynierii Środowiska         ul. Piotrowo 5, 60-965 Poznań         Prerequisites in terms of knowledge, skills and social         1       Knowledge         He knows the basic issues of steel technological properties. Recognizes and connections and explains the calculation protection. He can propose a connection so ad copt appropriate design and technological protection. He can propose a connection so ad opt appropriate design and technological protection. He can propose a connection so ad paproximation of the basic methods of designing elements of metal st dimensioning elements of metal constructions such as beams, columns, t         Study outcomes and reference to the educatie         Knowledge:         1. Recognizes and characterizes the types of workloads and the principle [K_W05]         2. Explains the basic methods of designing metal structures in the area of with construction nodes - [K_W05, K_W07]<	Polish elective			
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Lecture:       22       Classes:       8       Laboratory:       -       Project         Status of the course in the study program (Basic, major, other)       (univers         (brak)       (univers)         Education areas and fields of science and art       technical sciences         Responsible for subject / lecturer:       dr inż. Robert Studziński       email: robert.studziński@put.poznan.pl         tel. 0-61 665 2091       Wydział Budownictwa i Inzynierii Środowiska       ul. Piotrowo 5, 60-965 Poznań         Prerequisites in terms of knowledge, skills and social       He knows the basic issues of steel technold and mechanical properties. Recognizes an connections and explains the calculation pr         2       Skills       Uses basic designs in the mechanics of con adopt appropriate design and technological protection. He can propose a connection s         3       Social competencies       He is able to work independently and coopt         An approximation of the basic methods of designing elements of metal studienensioning elements of metal constructions such as beams, columns, t         Study outcomes and reference to the education (K_W05]       2. Explains the basic methods of designing metal structures in the area of with construction nodes - [K_W05, K_W07]         3. Describes the rules for designing lattice trusses and roofing - [K1_W05         Skills:       1. You can choose the type of steel section for selected elements of the s         2. He can determine t	No. of credits			
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Education areas and fields of science and art technical sciences  Responsible for subject / lecturer: dr inż. Robert Studziński email: robert.studzinski@put.poznan.pl tel. 0-61 665 2091 Wydział Budownictwa i Inzynierii Środowiska ul. Piotrowo 5, 60-965 Poznań  Prerequisites in terms of knowledge, skills and social  Knowledge Uses basic designs in the mechanics of coi adopt appropriate design and technologica protection. He can propose a connection sc Social competencies Assumptions and objectives of the course: An approximation of the basic methods of designing elements of metal sti dimensioning elements of metal constructions such as beams, columns, t Study outcomes and reference to the educatie Knowledge: 1. Recognizes and characterizes the types of workloads and the principle [K_W05] 2. Explains the basic methods of designing metal structures in the area of with construction nodes - [K_W05, K_W07] 3. Describes the rules for designing lattice trusses and roofing - [K1_W05 Skills: 1. You can choose the type of steel section for selected elements of the s 2. He can determine the types of burdens and the rules of their transmiss 3. He is able to properly associate a structural element with a standard co structure such as a rib ceiling or roof - [K_U07]	(brak)			
technical sciences         Responsible for subject / lecturer:         dr inż. Robert Studziński         email: robert.studzinski@put.poznan.pl         tel. 0-61 665 2091         Wydział Budownictwa i Inzynierii Środowiska         ul. Piotrowo 5, 60-965 Poznań         Prerequisites in terms of knowledge, skills and social         1       Knowledge         1       Knowledge         2       Skills         3       Social connections and explains the calculation protection. He can propose a connection so adopt appropriate design and technologica protection. He can propose a connection so adopt appropriate design and technologica protection. He can propose a connection so adopt appropriate design and technologica protection. He can propose a connection so adopt appropriate design and technologica protection. He can propose a connection so the sale to work independently and cooperection. He can propose a connection so adopt appropriate design and technologica protection. He can propose a connection so adopt appropriate design and technologica protection. He can propose a connection so the basic methods of designing elements of metal study outcomes and reference to the education of the basic methods of designing metal structures in the area of with construction nodes - [K_W05, K_W07]         3. Describes the rules for designing lattice trusses and roofing - [K1_W05         Skills:         1. You can choose the type of steel section for selected elements of the s s         2. He can determine the types of burdens and the rules of their transmiss </td <td colspan="2">ECTS distribution (number</td>	ECTS distribution (number			
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3       Social competencies       He is able to work independently and coop         Assumptions and objectives of the course:       An approximation of the basic methods of designing elements of metal still dimensioning elements of metal constructions such as beams, columns, to Study outcomes and reference to the education         Knowledge:       1. Recognizes and characterizes the types of workloads and the principle [K_W05]         2. Explains the basic methods of designing metal structures in the area of with construction nodes - [K_W05, K_W07]         3. Describes the rules for designing lattice trusses and roofing - [K1_W05         Skills:         1. You can choose the type of steel section for selected elements of the s         2. He can determine the types of burdens and the rules of their transmiss         3. He is able to properly associate a structural element with a standard costructure such as a rib ceiling or roof - [K_U07]	Skills Uses basic designs in the mechanics of construction and strength of materials. He is able to adopt appropriate design and technological solutions in the field of corrosion protection and fi protection. He can propose a connection solution using the appropriate calculation procedure			
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Knowledge:         1. Recognizes and characterizes the types of workloads and the principle [K_W05]         2. Explains the basic methods of designing metal structures in the area of with construction nodes - [K_W05, K_W07]         3. Describes the rules for designing lattice trusses and roofing - [K1_W05         Skills:         1. You can choose the type of steel section for selected elements of the s         2. He can determine the types of burdens and the rules of their transmiss         3. He is able to properly associate a structural element with a standard costructure such as a rib ceiling or roof - [K_U07]	Study outcomes and reference to the educational results for a field of study			
<ol> <li>Recognizes and characterizes the types of workloads and the principle [K_W05]</li> <li>Explains the basic methods of designing metal structures in the area of with construction nodes - [K_W05, K_W07]</li> <li>Describes the rules for designing lattice trusses and roofing - [K1_W05 Skills:</li> <li>You can choose the type of steel section for selected elements of the s</li> <li>He can determine the types of burdens and the rules of their transmiss</li> <li>He is able to properly associate a structural element with a standard co structure such as a rib ceiling or roof - [K_U07]</li> </ol>				
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<ol> <li>He can determine the types of burdens and the rules of their transmiss</li> <li>He is able to properly associate a structural element with a standard co structure such as a rib ceiling or roof - [K_U07]</li> </ol>	1. You can choose the type of steel section for selected elements of the structure of the object - [K_U07]			
structure such as a rib ceiling or root - [K_U07]	ion to the individual components - [K_U02] mputational procedure and design a simple			
Social competencies:				
1 You understand the need for lifelong learning and enhancing professional competence - IK K061				
2. Can cooperate and work in a group over a designated task - IK K011				
3. Correctly identifies and resolves dilemmas related to the profession - [K_K07]				
	-			

Assessment of individual student projects combined with oral defense of work,			
colloquium with the content of the exercises. (Once per semester - 1,5h),			
Examination of lecture content. (Once per semester - 1,5h).			
Orading scale .			
91%? 100% very good (A)			
81%? 90% good plus (B)			
71%? 80% good (C)			
61%? 70% positive plus (D)			
51%? 60% sufficient (E)			
less than 50% insufficient (F)			
Course description			
Form of classes: lectures - Lecture problem / conversational lecture / lecture and	multimedia presentatio	on.	
Basic information on methods of designing and dimensioning bent, eccentrically compressed metal construction elements. Cross sectional strength on bending and shear. Loss of flat bending form - dislocation and loss of local stability. Shaping of joints in steel structures. Head and base of the pole. Beam support and mounting brackets. The problems of designing trusses and simple frame objects.			
Form of classes: exercises			
Principles of shaping the geometry of the steel roof. Analysis of the Land II of the limit state of the bent, compressed and			
eccentrically compressed elements of metal structures.			
Form of classes: projects			
Design of lattice trusses and roofs.			
Basic bibliography:			
1. Poradnik projektanta konstrukcji metalowych, Bogucki , Arkady , Warszawa , 7	982		
2. Konstrukcje metalowe cz. I i II, Łubiński, Żółtowski , Arkady , Warszawa , 1992			
3. Tablice do projektowania konstrukcji metalowych, Bogucki W., Żyburtowicz M, Arkady , Warszawa , 1996			
4. Konstrukcje metalowe cz.1 i 2, Łubiński, Filipowicz, Żółtowski, Arkady , Warsz	awa , 2000		
Additional bibliography:			
1. PN-EN 1991 Eurokod 1 Podstawy projektowania konstrukcji i oddziaływania na konstrukcje 2. PN-EN 1993 Eurokod 3 Projektowanie konstrukcji stalowych			
Result of average student's workload			
Activity		Time (working hours)	
1. Participation in lectures		22	
2. Participate in auditorium exercises		10	
3. Participate in design exercises		10	
4. Completion (at home) of works related to the project		33	
5. Participation in consultations on auditing and design exercises		3	
6. Preparing to pass a test of the auditorium exercises		30	
7. Preparing to pass the lecture exam		40	
Student's workload			
Source of workload	hours	ECTS	
Total workload	150	6	
Contact hours	47	3	
Practical activities	45	3	