

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Steel Structures		Code 1010104171010111282
Field of study Civil Engineering First-cycle Studies	Profile of study (general academic, practical) (brak)	Year /Semester 4 / 7
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 22 Classes: 8 Laboratory: - Project/seminars: 10		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 technical sciences		ECTS distribution (number and %) 6 100%
Responsible for subject / lecturer: dr inż. Robert Studziński email: robert.studzinski@put.poznan.pl tel. 0-61 665 2091 Wydział Budownictwa i Inżynierii Środowiska ul. Piotrowo 5, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	He knows the basic issues of steel technology used in building construction and their strength and mechanical properties. Recognizes and characterizes the types of welded and screwed connections and explains the calculation procedures.
2	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 fire protection. He can propose a connection solution using the appropriate calculation procedure.
3	Social competencies	He is able to work independently and cooperate in a group.
Assumptions and objectives of the course: An approximation of the basic methods of designing elements of metal structures and familiarizing with the methods of dimensioning elements of metal constructions such as beams, columns, trusses.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Recognizes and characterizes the types of workloads and the principles of their transmission to individual components - [K_W05] 2. Explains the basic methods of designing metal structures in the area of compressed, stretched and bent elements together with construction nodes - [K_W05, K_W07] 3. Describes the rules for designing lattice trusses and roofing - [K1_W05, K1_W07]		
Skills: 1. You can choose the type of steel section for selected elements of the structure of the object - [K_U07] 2. He can determine the types of burdens and the rules of their transmission to the individual components - [K_U02] 3. He is able to properly associate a structural element with a standard computational procedure and design a simple structure such as a rib ceiling or roof - [K_U07]		
Social competencies: 1. You understand the need for lifelong learning and enhancing professional competence - [K_K06] 2. Can cooperate and work in a group over a designated task - [K_K01] 3. Correctly identifies and resolves dilemmas related to the profession - [K_K07]		
Assessment methods of study outcomes		

<p>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). Grading scale : Number of percentage points score</p> <p>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)</p>		
Course description		
<p>Form of classes: lectures - Lecture problem / conversational lecture / lecture and multimedia presentation. 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.</p> <p>Form of classes: exercises Principles of shaping the geometry of the steel roof, Analysis of the I and II of the limit state of the bent, compressed and eccentrically compressed elements of metal structures.</p> <p>Form of classes: projects Design of lattice trusses and roofs.</p>		
Basic bibliography:		
<ol style="list-style-type: none"> 1. Poradnik projektanta konstrukcji metalowych, Bogucki , Arkady , Warszawa , 1982 2. Konstrukcje metalowe cz. I i II, Łubiński, Żółtowski , Arkady , Warszawa , 1992 3. Tablice do projektowania konstrukcji metalowych, Bogucki W., Żybertowicz M, Arkady , Warszawa , 1996 4. Konstrukcje metalowe cz.1 i 2, Łubiński, Filipowicz, Żółtowski, Arkady , Warszawa , 2000 		
Additional bibliography:		
<ol style="list-style-type: none"> 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