

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Timber Structures		Code 1010115131010110247
Field of study Civil Engineering Extramural Second-cycle	Profile of study (general academic, practical) general academic	Year /Semester 2 / 3
Elective path/specialty Construction Engineering and Management	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 20 Classes: - Laboratory: - Project/seminars: 10		No. of credits 3
Status of the course in the study program (Basic, major, other) major		(university-wide, from another field) from field
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 3 100% 3 100%
Responsible for subject / lecturer: Piotr Rapp email: piotr.rapp@put.poznan.pl tel. 61 6652094 Faculty of Civil and Environmental Engineering 60-965 Poznan, ul. Piotrowo 5		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	The basic knowledge on structural mechanics and strength of materials.
2	Skills	Determining of the static model of a structure, determining of inner and support forces, determining of stresses and deflections in structural members.
3	Social competencies	Team work ability.
Assumptions and objectives of the course: The target of the course is to learn structure, elasticity and strength properties of wood, carpentry joints, timber fasteners (nails, bolts, screws, tooth-plate connectors, shear plates), glued joints, methods of wood structure designing, methods of joint designing, beam structures, purlin roof structures, collar-beam roof structures.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Knowing of specific properties of wood against a background of other materials - [K_W14]		
2. Knowing of thermal and moisture working conditions for a designed structure - [K_W13]		
3. Knowing of timber joint designing methods resulting from wood properties - [K_W07]		
Skills:		
1. Determining data, structural analysis and strength analysis of wood structures - [K_U02]		
2. Designing structure joints - [K_U04]		
3. Making technical drawings of wood structures - [K_U14]		
Social competencies:		
1. Team work ability. - [K_K01]		
Assessment methods of study outcomes		

<p>Passing the course involves passing project seminars and lectures. Passing project seminars involves preparation and oral project defence. Passing lectures involves written final exam. Exam marks scale in %: 90 very good (A) 85 good plus (B) 75 good (C) 65 satisfactory plus (D) 55 satisfactory (E) below 54 unsatisfactory/ failed (F)</p>		
Course description		
<p>Wood as a building material. Structure, elasticity and strength properties of wood. Carpentry joints. Timber fasteners (nails, bolts, screws, toot-plate connectors, shear plates). Glued joints. Methods of wood structure designing. Methods of joint designing. Beam structures. Purlin roof structures. Collar-beam roof structures.</p>		
Basic bibliography:		
<p>1. Z. Lis, P. Rapp: Drewno i materiały drewnopochodne. Rozdział 10 w: Budownictwo ogólne, tom I, Arkady, Warszawa 2005, 2006. 2. H. Neuhaus: Budownictwo drewniane. Polskie Wydawnictwo Techniczne, Rzeszów 2004. 3. J. Kotwica: Konstrukcje drewniane w budownictwie tradycyjnym. Arkady, Warszawa 2004. 4. Cz. Wajdzik: Więźby dachowe. Wyd. Akad. Roln. we Wrocławiu, Wrocław 2001. 5. W. Nożyński: Przykłady obliczeń konstrukcji budowlanych z drewna. Wyd. 2. WSiP, Warszawa 2004. 6. H. Zobel, T. Alkhafaji: Mosty drewniane. WKŁ, Warszawa 2006. 7. Strona internetowa: http://fast10.vsb.cz/temtis/en/ [1] Podręcznik 1. Konstrukcje drewniane. Projekt Leonardo TEMTIS, Opole 2008 [2] Handbook 2. Design of timber Structures According to E C 5. Projekt Leonardo TEMTIS, Opole 2008</p>		
Additional bibliography:		
<p>1. W. Michniewicz: Konstrukcje drewniane. Arkady, Warszawa 1958. 2. Z. Dziarnowski, W. Michniewicz: Konstrukcje z drewna i materiałów drewnopochodnych, Arkady, Warszawa 1974. 3. Z. Gołębiowski: Konstrukcje drewniane. PWN, Warszawa 1978. 4. W. Michniewicz: Konstrukcje drewniane. Arkady, Warszawa 1958. 5. Z. Dziarnowski, W. Michniewicz: Konstrukcje z drewna i materiałów drewnopochodnych, Arkady, Warszawa 1974. 6. Z. Gołębiowski: Konstrukcje drewniane. PWN, Warszawa 1978.</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Preparation for passing lectures	30	
2. Making projects	95	
Student's workload		
Source of workload	hours	ECTS
Total workload	75	3
Contact hours	32	1
Practical activities	39	1