

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Timber Structures</b>		Code <b>1010115131010100247</b>
Field of study <b>Civil Engineering Extramural Second-cycle</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>2 / 3</b>
Elective path/specialty <b>Construction Engineering and Management</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>Second-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: <b>20</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>10</b>		No. of credits <b>3</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>		
Piotr Rapp email: piotr.rapp@put.poznan.pl tel. 61 6652094 Faculty of Civil and Environmental Engineering 60-965 Poznan, ul. Piotrowo 5		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	The basic knowledge on structural mechanics and strength of materials.
2	<b>Skills</b>	Determining of the static model of a structure, determining of inner and support forces, determining of stresses and deflections in structural members.
3	<b>Social competencies</b>	Team work ability.
<b>Assumptions and objectives of the course:</b>		
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.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
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]		
<b>Skills:</b>		
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]		
<b>Social competencies:</b>		
1. Team work ability. - [K_K01]		
<b>Assessment methods of study outcomes</b>		

<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>		
<b>Course description</b>		
<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>		
<b>Basic bibliography:</b>		
<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: <a href="http://fast10.vsb.cz/temtis/en/">http://fast10.vsb.cz/temtis/en/</a> [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>		
<b>Additional bibliography:</b>		
<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>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Preparation for passing lectures	30	
2. Making projects	95	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	75	3
Contact hours	32	1
Practical activities	39	1