

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Bridge Fittings</b>		Code <b>1010102131010120224</b>
Field of study <b>Civil Engineering Second-cycle Studies</b>	Profile of study (general academic, practical) <b>general academic</b>	Year /Semester <b>2 / 3</b>
Elective path/specialty <b>Bridges and Underground Engineering</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>full-time</b>	
No. of hours Lecture: - Classes: - Laboratory: - Project/seminars: <b>15</b>		No. of credits <b>1</b>
Status of the course in the study program (Basic, major, other) <b>major</b>		(university-wide, from another field) <b>from field</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>1 100%</b> <b>1 100%</b>
<b>Responsible for subject / lecturer:</b> dr inż. Iwona Jankowiak email: iwona.jankowiak@put.poznan.pl tel. 61 647 58 28 Faculty of Civil and Environmental Engineering ul. Piotrowo 5, 60-965 Poznań		<b>Responsible for subject / lecturer:</b> mgr inż. Katarzyna Mossor email: kasia.mossor@gmail.com tel. 61 647 58 28 Faculty of Civil and Environmental Engineering ul. Piotrowo 5, 60-965 Poznań
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Basic knowledge concerning bridges design.
2	<b>Skills</b>	The ability to recognize bridge elements and to appraise their technical state, self-learning skills.
3	<b>Social competencies</b>	Ability to adapt the type of technical solution to the communication requirements, respect for the Polish language, understanding the need for lifelong learning and group collaboration.
<b>Assumptions and objectives of the course:</b> Getting to know in details subjects concerning bridges equipment, proper choice of equipment to assure bridge durability.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Student knows the bridge equipment elements, their functions and requirements. - [K_W17]		
2. Student knows the current regulations concerning the design of bridge equipment. - [K_W13, K_W14]		
3. Student knows the current technical solutions as well as the former solutions met in existing bridges. - [K_W16]		
<b>Skills:</b>		
1. Student can correctly design bridge equipment elements. - [K_U03]		
2. Student can recognize all of the bridge equipment elements and appraise their technical state. - [-]		
<b>Social competencies:</b>		
1. Student can adapt the type of technical solution to the communication requirements. - [-]		
2. Student can collaborate and work together in a group, is aware of the need for self-education. - [K_K01, K_K06]		
3. Student complies with the principles of the Polish language and the rules of preparation of technical documentation. - [K_K02]		
<b>Assessment methods of study outcomes</b>		

<ol style="list-style-type: none"> <li>1. Preparation of the design exercise.</li> <li>2. Ongoing monitoring of the student's knowledge on every part of preparation.</li> <li>3. Oral test (talk) on completed project.</li> <li>4. Written test of the student's knowledge in the field of material presented during the lectures.</li> </ol>		
<b>Course description</b>		
<ol style="list-style-type: none"> <li>1. Compansion joints ? types, features, application.</li> <li>2. Dehydration elements, the rules of design.</li> <li>3. Isolations ? materials, features, application.</li> <li>4. Road surfaces on bridges.</li> <li>5. Antinoise screens, covers, lighting ? types, application.</li> <li>6. Pavement developments, kerbs, cornice boards ? types, application.</li> <li>7. Barriers and banisters ? types, application.</li> <li>8. Equipment providing the access to the bridge ? types, application.</li> <li>9. Elements of railway and tram bridges equipment.</li> </ol>		
<b>Basic bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Arkadiusz Madaj, Witold Wołowicki, Podstawy projektowania budowli mostowych, WKiŁ Warszawa 2003/2007.</li> <li>2. Joanna Łucyk-Ossowska, Wojciech Radomski, Urządzenia dylatacyjne w mostowych obiektach drogowych, WKiŁ, Warszawa 2011.</li> <li>3. Jan Marszałek, Ryszard Chmielewski, Andrzej Wolniewicz, Mosty kolejowe, Wyd. PKP, Warszawa 2010.</li> </ol>		
<b>Additional bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Józef Głomb, Wyposażenie mostów, Wyd. PŚ, Gliwice 1975.</li> <li>2. Arkadiusz Madaj, Witold Wołowicki, Projektowanie mostów betonowych, WKiŁ Warszawa 2010</li> <li>3. Kazimierz Furtak, Mosty zespolone, Wyd. Naukowe PWN, Warszawa 1999.</li> <li>4. Leszek Janusz, Arkadiusz Madaj, Obiekty inżynierskie z blach falistych, WKiŁ, Warszawa 2007.</li> <li>5. Katalog Detali Mostowych, GDDKiA Wydział Mostów, Biuro Projektowo ? Badawcze Dróg i Mostów ?Transprojekt-Warszawa?Sp.z.o., Warszawa 2002.</li> </ol>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Participation in projects	15	
2. Studying	5	
3. Project realization	5	
4. Preparation to the final test	5	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	25	1
Contact hours	20	1
Practical activities	20	1