Name of the module/subject Product Subject Pr	Name of		STUDY MODULE D	ESCRIPTION FORM			
Field of study       Profile of study       Year /Semester         Civil Engineering First-cycle Studies       Profile of study       Year /Semester         Cycle of study:       -       Course (computery, elective         Polish       Subject offered in:       Course (computery, elective         Polish       First-cycle studies       Full-time         No. of torus       Eacture:       30         Lecture:       30       Classes:       -         Laboratory:       -       Project/seminars:       3         Status of the course in the study program (Basic, major, other)       (university-wide, from another field)       (brak)         Education areas and fields of science and at       ECTS distribution (number and 56)       ECTS distribution (number and 56)         Responsible for subject / lecturer:       (university-wide, from another field)       (brak)       ECTS distribution (number and 56)         1       Knowledge       Knowledge, skills and social competencies:       ECTS distribution (number and 56)         1       Knowledge       Skills related to the stractic calculations and design of concrete structures, steel structures and Fundamentals of Bridge Engineering in the field of engineering skills       3         3       Social competencies       Skills related to the stractic calculations and design of concrete and steel structures, skills of formation	Bride	f the module/subject <b>ges-Desian</b>		c 1	Code 010101171010105400		
Civil Engineering First-cycle Studies         (general academic, practical) (brak)         4 / 7           Elective path/specialty         -         Course (compulsory, elective Polish         Course (compulsory, elective elective           Cycle of study:         First-cycle studies         Form of study (full-time part-dime)         Course (compulsory, elective elective           No. of hours         Ecture:         3         Status of the course in the study program (Basic, major, other) (brak)         (university-wide, from another field)           Education areas and fields of science and at         ECTS distribution (number and \$6,)         ECTS distribution (number and \$6,)           Responsible for subject / lecturer:         of hab. inz. Arkadiusz. madaj@put.poznan.pl tet. 61 647 68 30         ECTS distribution (number and \$6,)           Prerequisites in terms of knowledge, skills and social competencies:         Indometion simple bridge structure, self-learning skills           1         Knowledge         Knowledge of the strength of materials, structural mechanics, concrete structures, skills of inferiong learning and group collaboration           2         Skills         Skills related to the static calculations and design of concrete and steel structures, skills of inferiong learning and group collaboration           3         Social competencies         Ability to adapt of the type of any vivil engineering structure to the communication reprimerents and social expectations, respect for the Polish language, understand the need for ifferiong le	Field of	study		Profile of study	Year /Semester		
Endition         First-cycle studies         Course (computatory, elective Polish         Course (computatory, elective elective           Cycle of study:         First-cycle studies         Form of study (full-time, part-time)         Course (computatory, elective elective           No. of tours         First-cycle studies         full-time         No. of credits           Lecture:         30         Classes:         -         Laboratory:         Project/seminars:         No. of credits           Status of the course in the study program (Bacis, major, other)         (university-wide, from another field)         (brak)           Education areas and fields of science and ant         ECTS distribution (number and 50)         ECTS distribution (number and 50)           Responsible for subject / lecturer:         of hab, inz. Arkadiusz. Madaj@, prof. PP email: arkadiusz.madaj@put.poran.pl         ECTS distribution (number and 50)           Praculy of CNI and Environmental Engineering ul. Protrows 5, 69-965 Poznari         Knowledge of the strength of materials, structural mechanics, concrete structures, stell structures and Fundamentals of Bridge Engineering in the field of engineering degree studies           2         Skills         Skills related to the static calculations and design of concrete and steel structures, skills of formation simple bridge structures, relevanting skills           3         Social competencies         Ability to adapt of the type of any civil engineering structure to the communication requirements and s	Civil	Engineering Fir	st-cvcle Studies	(general academic, practical)	A 1 7		
Polish       elective         Cycle of study:       Form of study (full-time,part-time)       full-time         No. of nours       Lecture:       30       Classes:       Laboratory:       Project/seminars:       No. of oredits         Status of the course in the study program (Basic, major, other)       (university-wide, from another field)       No. of oredits         Classes:       Laboratory:       Project/seminars:       No. of oredits         Status of the course in the study program (Basic, major, other)       (university-wide, from another field)       (Drak)         Education areas and fields of science and at       ECTS distribution (number and 56)       Status of the course in the study program (Basic, major, other)       (University-wide, from another field)         Responsible for subject / lecturer:       of hab. in2. Arkadiusz. Madaji Pput.poznan.pl       ECTS distribution (number and 56)         I. 61 647 58 30       Faculty of Civil and Environmental Engineering       U. Piotrowo 5, 60-965 Poznad         Prerequisites in terms of knowledge, skills and social competencies:         1       Knowledge       Skills related to the static calculations and design of concrete and steel structures, skills of formation simple bridge structure, self-learning skills       formation simple bridge structure, self-learning skills         3       Social competencies       Ability to adapt of the type of any civil engineenring structure to the	Flective	path/specialty		Subject offered in:	Course (compulsory elective)		
Cycle of study:         First-cycle studies         Form of study (full-time)           Na. of hours         Lecture:         30         Classes:         -         Laboratory:         -         Project/seminars:         -         3           Status of the course in the study program (Basis, major, other)         (university-wide, from another field)         No. of credits         3           Status of the course in the study program (Basis, major, other)         (university-wide, from another field)         (brak)           Education areas and fields of science and art         (brak)         (brak)         CTS distribution (number and %)           Responsible for subject / lecturer:         of hab. inz. Arkadiusz, Madaj, prof. PP email: arkadiusz, madaj@put.poznan.pl teil. 61 647 58 30         Facilyto of CWII and Environmental Engineering ul. Piotrowo 5, 60-965 Poznad           Prerequisites in terms of knowledge, skills and social competencies:         I         Knowledge         Stulits related to the static calculations and design of concrete and steel structures, steel structures and Fundamentals of Bridge Engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for infelong learning and group collaboration           3         Social competencies:         Ability to adapt of the type of any civil engineering structure to the company standards PN-EN           Studue tons the basic for calculating the main structural analysis and mechanical design of different types of concret	LICOLIVO	pathopoolary	-	Polish	elective		
First-cycle studies       full-time         No. of hours       No. of credits         Lecture:       30       Classes:       -       Laboratory:       -       Project/seminars:       -       3         Status of the course in the study program (Basic, major, other)       (university-wide, from another field)       (brak)         Education areas and fields of science and art       Image: Comparison of the course in the study program (Basic, major, other)       ECTS distribution (number and %)         Responsible for subject / lecturer:       dr hab. in2. Arkadiusz. Mada@u pt.op.cna.n.pl       ECTS distribution (number and %)         remail: arkadiusz.mada@u put.op.cna.n.pl       tel. 61 647 58 30       Faculty of Civil and Environmental Engineering         ul. Piotrowo 5, 60-965 Poznań       Nowledge of the strength of materials, structural mechanics, concrete structures, steel         stutures and Fundamentals of Bridge Engineering in the field of engineering degree studies       Stills related to the static calculations and design of concrete and steel structures, skills of formation simple bridge structure, seplect for the Polish language, understand the need for of inferiong learning and group collaboration         a       Social competencies       Ability to adapt of the type of any civil engineering skills         3       Social competencies of the work and design of bridges = negineering skills       Social of inferiong learning and group collaboration         Assumptions and Objecti	Cycle of	f study:		Form of study (full-time,part-time)	•		
No. of hours       No. of aredits         Lecture:       30       Classes:       - Laboratory:       - Project/seminars:       3         Status of the course in the study program (Basic, major, other)       (university-wide, from another field)       (brak)         Education areas and fields of science and art       (brak)       (brak)       ECTS distribution (number and %)         Education areas and fields of science and art       ECTS distribution (number and %)       ECTS distribution (number and %)         Responsible for subject / lecturer:       dr hab, in2. Arkadiusz Madaj, prof. PP       email: arkadiusz.madai@Put.poznan.pl       tel. 61 647 58 30         Facuty of Civil and Environmental Engineering       ul. Piotrowo 5, 60-965 Poznań       Facuty of Civil and Environmental Engineering         Prerequisites in terms of knowledge, skills and social competencies:       1       Knowledge       Skills related to the static calculations and design of concrete and steel structures, skills of formation simple bridge structure, self-learning skills       3       Social competencies         2       Skills       Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifetong learning and group collaboration         Assumptions and objectives of the conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the		First-cyc	le studies	full-ti	ne		
Lecture: 30       Classes: - Laboratory: - Project/seminars: - 3         Status of the course in the study program (Basic, major, other)       (university-wide, from another field)         Education areas and fields of science and art       (Drak)         Education areas and fields of science and art       ECTS distribution (number and %)         Responsible for subject / lecturer:       (brak)         cf hab. inż. Arkadiusz. Madaj, prof. PP       emait: arkadiusz. madaj@put.poznan.pl         tel. 61 647 58 30       Faculty of Civil and Environmental Engineering         u. Piotrowo, 6.0-965 Poznań       Freequisites in terms of knowledge, skills and social competencies:         1       Knowledge       Knowledge of the strength of materials, structural mechanics, concrete structures, steel structures and Fundamentals of Bridge Engineering in the field of engineering degree studies for mation simple bridge structure, self-learning skills         3       Social competencies       Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifeling learning and group colaboration         Assumptions and objectives of the course:       Eamiliarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN         Stude knows the specifics of the work and design of bridges - [K_W07, K_W09]	No. of h	ours			No. of credits		
Status of the course in the study program (Basic, major, other) (university-wide, from another field) (brak) (brak) (brak) Education areas and fields of science and art Education areas and fields of science and science areas are	Lectur	re: 30 Classes	: - Laboratory: -	Project/seminars:	3		
(brak)         (brak)           Education areas and fields of science and at         Education areas and fields of science and at           Education areas and fields of science and at         Education areas and fields of science and at           Education areas and fields of science and at         Education (number and %)           Responsible for subject / lecturer:         dr hab. inz. Arkadiusz.Madaj @put.poznan.pl           tel. 61 647 58 30         Fraculty of Civil and Environmental Engineering           Prerequisites in terms of knowledge, skills and social competencies:         Frowledge           1         Knowledge         Skills related to the static calculations and design of concrete structures, skiel of tormation simple bridge structure, self-learning skills           3         Social competencies         Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration           Assumptions and objectives of the course:         Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN           Study outcomes and reference to the educational results for a field of study           Knowledge:         1.           1. Student knows the pasic static-strength calculations of oncrete structures - [K_W07, K_W09] <td>Status o</td> <td>of the course in the study</td> <td>program (Basic, major, other)</td> <td>(university-wide, from another fiel</td> <td>d)</td>	Status o	of the course in the study	program (Basic, major, other)	(university-wide, from another fiel	d)		
Education areas and fields of science and art       ECTS distribution (number and %)         Responsible for subject / lecturer:       of hab. inż. Arkadiusz Madaj, prof. PP         emait: arkadiusz madaj@put.poznan.pl       tel. 61 647 58 30         Faculty of Civil and Environmental Engineering       ul. Piotrowo 5, 60-965 Poznań         Prerequisites in terms of knowledge, skills and social competencies:         1       Knowledge         2       Skills         3       Social competencies         competencies       Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration         Assumptions and objectives of the course:       1         Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration         Assumptions and objectives of the course:       1         Study outcomes and reference to the educational results for a field of study         Knowledge:       1         1. Student knows the specifics of the work and design of bridges structures - [K_W07, K_W09]         3. Student knows the specifics of the work and design of bridges structures - [K_W07, K_W09]         3. Student can perform the basis for calculating the main structural elements of bridge			(brak)	(k	orak)		
Responsible for subject / lecturer:         dr hab. inž. Arkadiusz Madaj, prof. PP         email: arkadiusz.madaj@put.poznan.pl         tel. 61 647 58 30         Faculty of Civil and Environmental Engineering         ul. Piotrowo 5, 60-965 Poznań         Prerequisites in terms of knowledge, skills and social competencies:         1       Knowledge         2       Skills         3       Social competencies         6       Ability to adapt of the static calculations and design of concrete and steel structures, skills of formation simple bridge structure, self-learning skills         3       Social competencies         Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN         Study outcomes:         Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN         Study outcomes:         Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards	Educatio	on areas and fields of sci	ence and art		ECTS distribution (number and %)		
dr hab. inž. Arkadiusz Madaj, prof. PP         email: arkadiusz, madaj@put.poznan.pl         tel. 61 647 58 30         Faculty of Civil and Environmental Engineering         ul. Plotrowo 5, 60-965 Poznań         Prerequisites in terms of knowledge, skills and social competencies:         1       Knowledge         Skills       Skills endeted to the strength of materials, structural mechanics, concrete structures, steel structures and Fundamentals of Bridge Engineering in the field of engineering degree studies         2       Skills         3       Social competencies         Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration         Assumptions and objectives of the course:         Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN         Study outcomes and reference to the educational results for a field of study         Knowledge:         1. Student knows the basic for calculating the main structural elements of bridge structures - [K_W07, K_W09]         3. Student knows the procedure for the static-strength calculations of concrete structures according to the system of European standards PN-EN         Encode - [K_W06]	Resp	onsible for subje	ect / lecturer:				
email: arkadiusz.madaj@put.poznan.pl         tel. 61 647 58 30         Faculty of Civil and Environmental Engineering         ul. Piotrowo 5, 60-965 Poznań         Prerequisites in terms of knowledge, skills and social competencies:         1       Knowledge         2       Skills         3       Social competencies         3       Social competencies         Assumptions and objectives of the course:         Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN         Student knows the specifics of the work and design of bridges - [K_W05, K_W10]         2. Student knows the procedure for the static-strength calculations of concrete structures - [K_W07, K_W09]         3. Student knows the procedure for the static-strength calculations of concrete structures - [K_W07, K_W09]         2. Student knows the procedure for the static-strength calculations of concrete structures - [K_W07, K_W09]         3. Student can perform the basic static-strength calculations of main structural components of any bridge - [K_U02, K_U04]         2. Student can adapt the type of structure to the communication requirements and social expectations - [K_K08]         3. Student can adapt the type of structure to the communication requirements and social expectations - [K_K08]         2. Student can calaborate and wo	dr ha	ab. inż. Arkadiusz Ma	daj, prof. PP				
tel. 61 64 7 58 30         Faculty of Civil and Environmental Engineering ul. Piotrowo 5, 60-965 Poznań         Prerequisites in terms of knowledge, skills and social competencies:         1       Knowledge         2       Skills         3       Social competencies:         3       Social competencies:         4       Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration         Assumptions and objectives of the course:       Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN         Study outcomes and reference to the educational results for a field of study         Knowledge:         1. Student knows the specifics of the work and design of bridges - [K_W05, K_W10]         2. Student knows the procedure for the static-strength calculations of concret structures according to the system of European standards PN-EN EN code - [K_W06]         Skills:         1. Student can perform the basic static-strength calculations of concrete structures according to the system of the PN- EN code - [K_W06]         Skills:         2. Student can perform the basic static-strength calculations of main structural components of any bridge - [K_U02, K_U04] <td< td=""><td>ema</td><td>ail: arkadiusz.madaj@ </td><td>out.poznan.pl</td><td></td><td></td></td<>	ema	ail: arkadiusz.madaj@	out.poznan.pl				
Prerequisites in terms of knowledge, skills and social competencies:         1       Knowledge         2       Skills         3       Social competencies:         3       Social competencies:         Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration         Assumptions and objectives of the course:         Familiarizing of students with the issues of conceptual design of the educational results for a field of study         Knowledge:         1       Study outcomes and reference to the educational results for a field of study         Knowledge:         1       Student knows the specifics of the work and design of bridges - [K_W05, K_W10]         2       Student can conduct calculating the main structural elements of bridge structures - [K_W07, K_W09]         3       Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN         Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN         Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN         Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN en (K_U08]         Student can conduct calcul	tel. 6	61 647 58 30 ulty of Civil and Enviro	amontol Engineering				
Prerequisites in terms of knowledge, skills and social competencies:         1       Knowledge         1       Knowledge         2       Skills         3       Social competencies:         3       Social competencies:         4       Ability to adapt of the type of any civil engineering skills         3       Social competencies:         6       Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration         Assumptions and objectives of the course:       Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types o concrete and steel bridges performed in different technologies according to the system of European standards PN-EN         Study outcomes and reference to the educational results for a field of study         Knowledge:         1       . Student knows the specifics of the work and design of bridges - [K_W05, K_W10]         2       Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN         Skills:       1         1       . Student can adapt the basic static-strength calculations of concrete structures according to the system of European standards PN-EN EN code - [K_W06]         Skills:       1         1	ul. P	Piotrowo 5, 60-965 Po	znań				
Knowledge         Knowledge of the strength of materials, structural mechanics, concrete structures, steel structures and Fundamentals of Bridge Engineering in the field of engineering degree studies           2         Skills         Skills related to the static calculations and design of concrete and steel structures, skills of formation simple bridge structure, self-learning skills           3         Social competencies         Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration           Assumptions and objectives of the course:         Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN           Study outcomes and reference to the educational results for a field of study           Knowledge:           1.         Student knows the specifics of the work and design of bridges - [K_W05, K_W10]           2.         Student can perform the basic for calculating the main structural elements of bridge structures according to the system of the PN-EN code - [K_W06]           Skills:         1.           1.         Student can perform the basic static-strength calculations of main structural components of any bridge - [K_U02, K_U04]           2.         Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN - [K_U08]	Prere	quisites in term	s of knowledge, skills an	d social competencies:			
2         Skills         Skills related to the static calculations and design of concrete and steel structures, skills of formation simple bridge structure, self-learning skills           3         Social competencies         Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration           Assumptions and objectives of the course:         Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN           Study outcomes and reference to the educational results for a field of study           Knowledge:           1. Student knows the specifics of the work and design of bridges - [K_W05, K_W10]           2. Student knows the procedure for the static-strength calculations of concrete structures according to the system of the PN-EN code - [K_W06]           Skills:           1. Student can perform the basic static-strength calculations of main structural components of any bridge - [K_U02, K_U04]           2. Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN - [K_U08]           Social competencies:           1. Student can adapt the type of structure to the communication requirements and social expectations - [K_K08]           2. Student can collaborate and work together in a group, is aware of the need for self-education - [K_K01	1	Knowledge	Knowledge of the strength of ma structures and Fundamentals of	aterials, structural mechanics, cor Bridge Engineering in the field of	ncrete structures, steel f engineering degree studies		
3       Social competencies       Ability to adapt of the type of any civil engineering structure to the communication requirements and social expectations, respect for the Polish language, understand the need for lifelong learning and group collaboration         Assumptions and objectives of the course:         Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types or concrete and steel bridges performed in different technologies according to the system of European standards PN-EN         Study outcomes and reference to the educational results for a field of study         Knowledge:         1. Student knows the specifics of the work and design of bridges - [K_W05, K_W10]         2. Student knows the procedure for the static-strength calculations of concrete structures according to the system of the PN-EN code - [K_W06]         Skills:         1. Student can perform the basic static-strength calculations of main structural components of any bridge - [K_U02, K_U04]         2. Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN - [K_U08]         Social competencies:         1. Student can adapt the type of structure to the communication requirements and social expectations - [K_K08]         2. Student can collaborate and work together in a group, is aware of the need for self-education - [K_K01, K_K03]         3. Student complies with the principles of the Polish language and the rules of preparation of technical documentation - [K_K07]	2	Skills	Skills related to the static calcula formation simple bridge structure	ations and design of concrete and e, self-learning skills	steel structures, skills of		
Assumptions and objectives of the course: Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types or concrete and steel bridges performed in different technologies according to the system of European standards PN-EN Study outcomes and reference to the educational results for a field of study Knowledge: 1. Student knows the specifics of the work and design of bridges - [K_W05, K_W10] 2. Student knows the basis for calculating the main structural elements of bridge structures - [K_W07, K_W09] 3. Student knows the procedure for the static-strength calculations of concrete structures according to the system of the PN- EN code - [K_W06] Skills: 1. Student can perform the basic static-strength calculations of main structural components of any bridge - [K_U02, K_U04] 2. Student can conduct calculations in accordance with the principles set out in the new system of European standards PN- EN - [K_U08] Social competencies: 1. Student can adapt the type of structure to the communication requirements and social expectations - [K_K08] 2. Student can collaborate and work together in a group, is aware of the need for self-education - [K_K01, K_K03] 3. Student complies with the principles of the Polish language and the rules of preparation of technical documentation - [K_K07]	3	Social competencies	Ability to adapt of the type of any requirements and social expectation for lifelong learning and group of	y civil engineering structure to the ations, respect for the Polish lang	e communication uage, understand the need		
Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards PN-EN          Study outcomes and reference to the educational results for a field of study         Knowledge:       1         1. Student knows the specifics of the work and design of bridges - [K_W05, K_W10]       2         2. Student knows the pocedure for the static-strength calculations of concrete structures - [K_W07, K_W09]       3         3. Student knows the procedure for the static-strength calculations of concrete structures according to the system of the PN-EN code - [K_W06]         Skills:       1         1. Student can perform the basic static-strength calculations of main structural components of any bridge - [K_U02, K_U04]         2. Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN - [K_U08]         Social competencies:         1. Student can adapt the type of structure to the communication requirements and social expectations - [K_K08]         2. Student can collaborate and work together in a group, is aware of the need for self-education - [K_K01, K_K03]         3. Student complies with the principles of the Polish language and the rules of preparation of technical documentation - [K_K07]	Assu	mptions and obj	ectives of the course:				
Study outcomes and reference to the educational results for a field of study         Knowledge:         1. Student knows the specifics of the work and design of bridges - [K_W05, K_W10]         2. Student knows the basis for calculating the main structural elements of bridge structures - [K_W07, K_W09]         3. Student knows the procedure for the static-strength calculations of concrete structures according to the system of the PN-EN code - [K_W06]         Skills:         1. Student can perform the basic static-strength calculations of main structural components of any bridge - [K_U02, K_U04]         2. Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN - [K_U08]         Social competencies:         1. Student can adapt the type of structure to the communication requirements and social expectations - [K_K08]         2. Student can collaborate and work together in a group, is aware of the need for self-education - [K_K01, K_K03]         3. Student complies with the principles of the Polish language and the rules of preparation of technical documentation - [K_K07]	Familiarizing of students with the issues of conceptual design, structural analysis and mechanical design of different types of concrete and steel bridges performed in different technologies according to the system of European standards EN EN						
Knowledge:         1. Student knows the specifics of the work and design of bridges - [K_W05, K_W10]         2. Student knows the basis for calculating the main structural elements of bridge structures - [K_W07, K_W09]         3. Student knows the procedure for the static-strength calculations of concrete structures according to the system of the PN-EN code - [K_W06]         Skills:         1. Student can perform the basic static-strength calculations of main structural components of any bridge - [K_U02, K_U04]         2. Student can conduct calculations in accordance with the principles set out in the new system of European standards PN-EN - [K_U08]         Social competencies:         1. Student can collaborate and work together in a group, is aware of the need for self-education - [K_K01, K_K03]         3. Student complies with the principles of the Polish language and the rules of preparation of technical documentation - [K_K07]	⊢amilia concret		shormed in directoric teerinologies	according to the system of Europ	bean standards PN-EN		
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Written test of the student's knowledge in the field of material presented during the lectures

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Course descript	ion			
1. General principles for design of bridge structures				
2. Preparation of the static calculation of bridge structures (moving loads, influence lines of the internal forces, envelopes of the internal forces, etc.)				
3. Consideration the impact of the phases of structure work during const	ruction for static calculations	and design of bridges		
4. Rules of dimensioning of concrete, steel and composite structural electron conditions of the limit state method)	ments according to PN-EN (f	ulfillment of the		
5. Designing the basic structural elements of bridges: main girders (bear decks in steel bridges, pavement cantilevers, etc.	m, plate, boxes, lattice), conc	crete bridge decks and		
6. Designing and dimensioning of bridge supports (abutments)				
Basic bibliography:				
1. Arkadiusz Madaj, Witold Wołowicki, Podstawy projektowania budowli	mostowych, WKiŁ Warszawa	a 2003/2007		
2. Arkadiusz Madaj, Witold Wołowicki, Projektowanie mostów betonowy	ch, WKiŁ Warszawa 2010			
3. Arkadiusz Madaj, Witold Wołowicki, Mosty betonowe WKŁ 1980/2002	2/			
4. Andrzej Ryżyński, Witold Wołowicki, Jacek Skarżewski, Janusz Karlik	owski, Mosty stalowe, PWN,	, Warszawa-Poznań 1984		
Additional bibliography:				
1. Jacek M. Skarżewski, Witold Wołowicki, Krzysztof Sturzbecher, Mosty Wydawnictwo PP, Poznań, 1989	y sprężone. Przewodnik do ć	wiczeń projektowych,		
2. Kazimierz Furtak, Mosty zespolone, PWN, Warszawa-Kraków 1999				
Result of average studen	t's workload			
Activity		Time (working hours)		
1. Participation in lectures		30		
2. Studying	70			
Student's worklo	bad			
Source of workload	hours	ECTS		
Total workload	100	3		
Contact hours	30	1		