STUDY MODULE DESCRIPTION FORM

Name of the module/subject **(-)**		Code **1010125131010122938**
Field of study **Transportation Engineering Extramural Second-**	Profile of study (general academic, practical) **general academic**	Year /Semester **2 / 3**
Elective path/specialty **Road Engineering**	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: **15** Classes: **-** Laboratory: **-** Project/seminars: **15**		No. of credits **4**
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 %) **4 100%** **4 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Principles of technical drawing Knowledge on strength of materials, static analysis of beams and columns, theory of plate analysis Knowledge on shaping of steel bridge spans Principles of ultimate load state control for steel bridges
2	**Skills**	Arranging loads on bridges Creating computational models for structural analysis Ability to take notes during lectures
3	**Social competencies**	Ability to work single-handedly Respect for the rules of ethics

Assumptions and objectives of the course:

--passing the knowledge on shaping steel bridges with orthotropic deck, footbridges and cable-stayed bridges; passing principles of design of orthotropic deck

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. 1. Knowledge on principles of construction and design of orthotropic decks - [-KW02,W04,W14,W16]
2. 2. Knowledge on principles of shaping and construction of steel footbridges - [--KW02,W04,W14,W16]
3. 3. Knowledge on principles of shaping and construction of steel cable-stayed bridges - [--KW02,W04,W14,W16]

Skills:

1. 1. Is able to characterize prociples of shaping footbridges and cable-stayed bridges - [-KU01,U03]
2. 2. Is able to carry on static analysis of bridge with orthotropic deck - [-KU04,U09]
3. 3. Is able to checz ultimata limit states fot members of orthotropic deck - [-KU04,U09]

Social competencies:

1. 1. Ability to work single-handedly - [-KK01]
2. 2. Responsibility for honesty of computation results - [-KK02]
3. 3. Awareness of necessity of constant professional education - [-KK03,K06]

Assessment methods of study outcomes
--Written test on principles of design of orthotropic deck An exercise concerning design of steel bridge with orthotropic deck
Course description
-1. Construction and technology of assembling of orthotropic deck 2. Basic sof design of orthotropic deck 3. Shaping and principles of design of footbridges 4. Shaping of cable-stayed bridges
Basic bibliography:
1. 1. Arkadiusz Madaj, Witold Wołowicki, Mosty betonowe WKŁ 1980/2002/. 2. 2. Arkadiusz Madaj, Witold Wołowicki, Projektowanie mostów betonowych, WKiŁ Warszawa 2010 3. 3. Andrzej Ajdukiewicz, Jakub Mames, Konstrukcje sprężone, Państwowe Wydawnictwo Naukowe, Warszawa 1979 4. 4. Jacek M. Skarżewski, Witold Wołowicki, Krzysztof Sturzbecher, Mosty sprężone. Przewodnik do ćwiczeń projektowych, Wydawnictwo PP, Poznań, 1989
Additional bibliography:
1. 1. Arkadiusz Madaj, Witold Wołowicki, Podstawy projektowania budowli mostowych, WKiŁ Warszawa 2003/2007 2. 2. Andrzej Łapko, Bjarne Christian Jensen, Podstawy projektowania i algorytmy obliczeń konstrukcji żelbetowych, Arkady, Warszawa 2005 3. 3. Włodzimierz Starosolski, Konstrukcje żelbetowe wg PN-B-03264:2002 i Eurokodu 2, Wydawnictwo Naukowe PWN, Warszawa 2009

Result of average student's workload

Activity	**Time (working hours)**

Student's workload

Source of workload	**hours**	**ECTS**
Total workload	100	4
Contact hours	37	1
Practical activities	77	3