STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Steel bridges**		Code **1010101161010125139**
Field of study **Civil Engineering First-cycle Studies**	Profile of study (general academic, practical) **general academic**	Year /Semester **3 / 6**
Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **elective**
Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**	
No. of hours Lecture: **30** Classes: **15** Laboratory: **-** Project/seminars: **15**		No. of credits **5**
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 %) **5 100%** **5 100%**

Responsible for subject / lecturer:

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Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Strength of materials and structural mechanics . Steel and concrete structures. Basic knowledge of soil mechanics and foundation engineering and roads engineering
2	**Skills**	The calculation of the static strength girders, basic types of connections, materials for steel structures, steel structures design standards
3	**Social competencies**	Awareness continuous updating of knowledge and its spread

Assumptions and objectives of the course:

The acquisition of knowledge by students in terms of: knowledge of structural systems of steel bridges, materials for the construction of bridges, construction of the joints, bridges, main girders, calculations of static and strength of these elements

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

Knowledge:

1. Understanding the principles of shaping, construction and calculation of steel bridges for small and medium spans spans. - [-]
2. Mastering the principles and norms of design of steel bridges - [-]
3. Knowledge of the structure of typical connections - [-]
4. Calculation of composite bridges - [-]
5. Calculation of bridge decks - [-]

Skills:

1. The selection of the steel bridge structure depending on the location and load - [-]
2. Construction of basic nodes and connections - [-]
3. Calculation of basic superstructures - [-]

Social competencies:

1. The acquisition of knowledge by students in terms of: knowledge of structural systems of steel bridges, materials for the construction of bridges, construction of the joints, bridges, main girders, calculations of static and strength of these elements - [-]

Assessment methods of study outcomes
-Exam -Tests - Design exercise and current knowledge control
Course description
1.Parts, components and systems, static steel bridges. 2 Steel decks of the road and railway bridges. 3 Konstruktion of elements of steel bridges. Shaping the plate girder spans with steel girders encased and composite steel and concrete. 4 The loads acting on the span truss bridges 5 Static calculations plate girder spans and composite steel-concrete spans 6 Static analysis of the decks
Basic bibliography: 1. Ryżyński A. I inni, Mosty stalowe, PWN, Warszawa-Poznań, 1984. 2. Karlikowski J., Sturzbecher K., Mosty stalowe. Przewodnik do ćwiczeń projektowych. Wyd. Politechniki Poznańskiej, Poznań, 1993 3. Karlikowski J., Madaj A., Wołowicki W., Mostowe konstrukcje zespolone stalowo-betonowe. WkiŁ, Warszawa, 2010 4. Furtak K., Podstawy mostów zespolonych. Wyd. Politechniki Krakowskiej, Kraków, 1999
Additional bibliography: 1. Bowles J.E., Structural steel design, McGraw-Hill Book Company, 1980 2. Bakht B., Jaeger L.G., Bridge analysis simplified, McGraw-Hill Book Company, 1985.

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	30
2. Participation in exercises and seminars	30
3. Preparing exercises at home	40
4. Exam Preparation	20

Student's workload

Source of workload	hours	ECTS
Total workload	125	5
Contact hours	60	2
Practical activities	30	1