STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Bridges-technology**		Code **1010101171010125402**
Field of study **Civil Engineering First-cycle Studies**	Profile of study (general academic, practical) **(brak)**	Year /Semester **4 / 7**
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: **-** Laboratory: **-** Project/seminars: **-**		No. of credits **3**
Status of the course in the study program (Basic, major, other) **(brak)**	(university-wide, from another field) **(brak)**	
Education areas and fields of science and art **technical sciences** **Technical sciences**		ECTS distribution (number and %) **3 100%** **3 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Construction of bridge abutments, bridge superstructures of concrete and steel Static work of bridge structures, distributions of internal forces, materials for construction of bridges
2	**Skills**	Supports the initial design and construction of concrete bridge superstructures and steel
3	**Social competencies**	Awareness of the need to acquire and extend knowledge

Assumptions and objectives of the course:

- Knowledge of construction methods bridges and scaffolding and formwork
- Understanding the basics of scaffolding projketowania
- Mastering the practical skills to prepare concrete plan and its implementation
- The impact of construction technology on design requirements abutments,
- Installation of equipment
- Construction of bridges while maintaining traffic

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

Knowledge:

1. Erections methods of bridge construction - [-]
2. Construction equipment elements of bridges - [-]
3. Erections of concrete bridges - [-]
4. Basic principles of structural analysis of scaffolding - [-]
5. Technological requirements for the construction of abutments - [-]

Skills:

1. choose the method of installation or construction of the proposed bridge - [-]
2. pre-design stage and formwork for the concrete bridge - [-]
3. Perform a concreting plan - [-]
4. design a scaffold for the assembly of the multi span steel bridge - [-]
5. design formwork for bridge concrete deck - [-]
6. knowledge of bridge equipment - [-]
Social competencies:
1. Student understands the need for continuous improvement of knowledge on the subject - [-]
2. Student understands the significance and importance of technology in the construction of the final technical effect and scheduled appointments - [-]
3. Student understands the dangers arising from poor construction formwork and scaffolding - [-]

Assessment methods of study outcomes
The written examination consisting of draw and discuss the tasks of construction methods, construction scaffolding and formwork
Design exercises together with gauges on the individual steps performed exercises
Course description
Necessary technical documentation to carry out the works
construction of concrete bridges with a discussion of the Help Us methods:
on the scaffolding of fixed, sliding or pivot on the ground, sliding on the basis of support
construction of concrete bridge spans using a cantilever assembly, concrete cantilever
construction method of moving the cross
construction of road to rail or road construction bridge spans with precast
staking out an object on the ground, trenches and their protection and drainage, installation of the reinforcement and prestressing tendons, preparation of concrete, concrete technology and compaction of concrete,
building support with the design of scaffolding and formwork,
cap construction paving, installation of drainage, waterproofing and paving exercise
installation of curbs, barriers and railings
construction of abutments, drainage and backfilling abutments
installation of bearings and expansion joints,
installation of curbs, barriers and railings,construction of abutments, drainage and backfilling abutments
installation of bearings and expansion joints,
construction scaffolding and formwork for stationary superstructure concrete bridge
methods of construction steel bridges (assembly) using cranes road and rail, the method of fitting the area and with the help of temporary supports and bargs.
supports construction scaffolding, steel structure bridge zerspolonego wieloprzęsłowego, bridge formwork panels,
Erection of cable-stayed bridge and hanging bridges
Basic bibliography:
Additional bibliography:

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	30
2. Preparing for exam	30

Student's workload

Source of workload	hours	ECTS
Total workload	100	3

Contact hours	30	1
Practical activities	0	0