STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Computer Aided Structural Design		**1010101161010110660**
Field of study	Profile of study (general academic, practical)	Year /Semester
Civil Engineering First-cycle Studies	**(brak)**	**3 / 6**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**obligatory**
Cycle of study:	Form of study (full-time,part-time)	
First-cycle studies	**full-time**	
No. of hours		No. of credits
Lecture: **-** Classes: **-** Laboratory: **15** Project/seminars: **-**		**1**
Status of the course in the study program (Basic, major, other)	(university-wide, from another field)	
(brak)	**(brak)**	
Education areas and fields of science and art		ECTS distribution (number and %)
technical sciences		**1 100%**
Technical sciences		**1 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has knowledge of technical mechanics and strength of materials, modeling materials and rules of the general principles of the theory of construction.Student knows shaping the design and analysis of rod systems in the field of statics, dynamics and stability. Knows the principles of designing and dimensioning of building construction elements: metal, reinforced concrete.
2	**Skills**	Student can evaluate and make a statement of loads acting on buildings. Can design selected elements and simple structures made on metal or reinforced concrete. Can perform dynamic analysis of simple rod systems for the evaluation of resonance states. He can perform a linear stability analysis and can evaluate the critical states for rod systems.
3	**Social competencies**	Student is able to work independently and collaborate with team on a designated task. He is responsible for the accuracy of the results of their work and their interpretation. Student complements and extends knowledge of modern techniques, processes and technology. Comply with the rules of ethics.

Assumptions and objectives of the course:

The aim of the course is to acquaint the student with the practical aspects of modeling rod systems using present computer applications. Furthermore, the ability to check a number of alternative solutions is to shape the imagination engineering to shape static scheme.

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

Knowledge:

1. Student knows selected computer programs to support the calculation and design of structures and the organization works rules. - [K_W11]

Skills:

1. Student is able to correctly define computational models used for computer analysis of the structure. - [K_U03]
2. Student is able to correctly select the tool (analytical or numerical) to solve problems of analysis and design of buildings and planning of works, get the results and carry out their verification. - [K_U05]

Social competencies:

1. The student is able to work independently and collaborate as a team on a designated task. - [K_K01]
2. The student is responsible for the accuracy of the results of their work and their interpretation. - [K_K02]
3. The student follows the rules of ethics. - [K_K10]

Assessment methods of study outcomes
The basis of credit is the defense of the project performed in the classroom and at home.

Course description
L1 Choice of the student's existing frame structure for later analysis. Selection of alternative static patterns for the selected design and meeting loads. L 2 Static analysis of the system. Adoption of the optimal static scheme and design of the structure (the RM-Win) L 3 Static analysis and design of structures (the Builder) L 4 Static analysis and design of structures (program Soldis) L 5 Analysis of vibrations and stability of the initial (the Soldis) L 6 Optimization of the structure (the Soldis) L 7 Comparison of results - Conclusions - defense project.

Basic bibliography:

Additional bibliography:

Result of average student's workload

Activity	**Time (working hours)**
1. Participation in laboratory	15
2. Homework	10

Student's workload

Source of workload	**hours**	**ECTS**
Total workload	25	1
Contact hours	15	1
Practical activities	15	1