STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Weak spots in the buildings**		Code **1010115141010108986**
Field of study **Civil Engineering Extramural Second-cycle**	Profile of study (general academic, practical) **(brak)**	Year /Semester **2 / 4**
Elective path/specialty **Construction Engineering and Management**	Subject offered in: **Polish**	Course (compulsory, elective) **elective**
Cycle of study: **Second-cycle studies**	Form of study (full-time,part-time) **part-time**	
No. of hours Lecture: **12** Classes: **-** Laboratory: **-** Project/seminars: **10**		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**		ECTS distribution (number and %) **3 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	The basic knowledge from the construction engineering.
2	**Skills**	Perform technical opinions.
3	**Social competencies**	The consciousness of the necessity of continuous updating and supplementings of the building knowledge and engineer skills.

Assumptions and objectives of the course:

The transfer of the maximum knowledge about technical problems causes the formation of skills in solving them.

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

Knowledge:

1. Student knows rules of the creations of the ecological and sustanable construction objects. - [-K_W16]
2. Student knows and applies regulations of the construction law. - [-K_W17]
3. Student knows norms and guidelines for the design of buildings and their components - [-K_W14]
4. The student has knowledge about the impact of construction projects on the environment. - [-K_W13]

Skills:

1. Student can select materials and technologies for the realization of the ecological and sustainable construction objects. - [-K_U08]
2. Student can select materials and technologies for the realization of the energy-saving, passive and zeroenergeting construction objects. - [-K_U08]
3. Student can prepare and analyse the energy balance of the construction object. - [-K_U08]

Social competencies:

1. Student independently supplements and extends the knowledge of within the range modern processes and technologies in construction. - [-K_K03]
2. Student is responsible for the honesty of obtained results of his own works and the estimation of works of the team subjected to him. - [-K_K02]
3. Student has a consciousness of the necessity of the lifting of professional and personal competences. - [-K_K06]
4. Student understands the need of the transfer to the reliable society of the construction knowledge. - [-K_K08]

Assessment methods of study outcomes

-Assessment of knowledge:
activity during classes and a lectures
knowledge presented during the colloquium,
project.
colloquium,
project.

The grading scale determined from:

Points:	grade:
higher then 100	excellent (A+)
91?100	very good (A)
81? 90	dobra plus (B)
71? 80	good plus (C)
61? 70	adequate plus (D)
51? 60	adequate (E)
Lower then 50	inadequate (F)

Course description

Sustainable construction.
Enrgy saving and passive construction.
Zero-energetic and plus-energetic construction.
Green walls and roofs.
Modern elevations.
Nanotechnology in construction.
Concrete wonders.

Teaching methods:
Lecture / problem lecture / lectures with multimedia presentation
Exercises / exercises involving the use of professional literature - standards. Building Acts
Implementation of a technical opinion on an existing facility, recognition of the causes of damage to a building element, selection of methods and technologies to solve the observed problem. Performing macroscopic studies, photographic documentation and static calculations of damaged components or thermal-humidity analyzes of solutions

Basic bibliography:

1. W.Borusiewicz: Konserwacja zabytków budownictwa murowanego. Wydawnictwo Arkady, Warszawa 1985
2. E. Masłowski, D. Spiżewska:Wzmacnianie konstrukcji budowlanych. Wyd. ?Arkady?, Warszawa 2000

Additional bibliography:

1. Cz. Linczowski, G. Stelmaszyk: Zabezpieczenie eksploatacyjne. Remonty i modernizacje obiektów budowlanych, Wyd. Politechniki Świętokrzyskiej, Kielce 2004

Result of average student's workload

Activity	Time (working hours)
1. participation in lectures	15
2. participation in project classes	15
3. participation in the consultation	16
4. preparation to attend and pass the colloquium	12
5. project realisation	26

Student's workload

Source of workload	hours	ECTS
Total workload	50	3
Contact hours	40	1

Practical activities	40	1