STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Construction Engineering**		Code **1010112121010115667**
Field of study **Civil Engineering**	Profile of study (general academic, practical) **general academic**	Year /Semester **1 / 2**
Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**
Cycle of study: **Second-cycle studies**	Form of study (full-time,part-time) **full-time**	
No. of hours Lecture: **30** Classes: **-** Laboratory: **-** Project/seminars: **30**		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**		ECTS distribution (number and %) **4 100%**

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**	Best to design the building.
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 delivery the maximum of the knowledge from the contemporary construction engineering.

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 rules of the creations of the energy-saving, passive and zeroenergeting construction objects. - [-K_W16]
3. Student knows norms and guidelines of the designing of building objects and their elements. - [-K_W14]
4. Student knows and applies regulations of the construction law. - [-K_W17]
5. The student has a knowledge of the influence of construction investments realization on the environment. - [-K_W13]

Skills:

1. Student can select materials and technologies for the realization of the ecological and sustainable construction objects. - [-]
2. Student can select materials and technologies for the realization of the energy-saving, passive and zeroenergeting construction objects. - [-]
3. Student can prepare and analyse the energy balance of the construction object. - [-K_U08]
4. Student has a skill of communicating in English, together with the familarity of elements of technical language from construction engineering. - [-K_U14]

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 has a consciousness of the need of the sustainable development in construction. - [-K_K04]
5. Student understands the need of the transfer to the 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 examination,
project.

examination,
project.

The grading scale determined from:

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

Course description

The responsibility of civil engineer.
The learning from disasters and failures in construction.
Analysis of the disaster WCT in New York.
Forensic engineering.
Engineers versus terrorists.
Sustainable construction.
Enrgy saving and passive construction.
Zero-energetic and plus-energetic construction.
The advantage of renewable energy in construction.
The energy-certification of construction objects.
Green walls and roofs.
Modern elevations.
Arboral structures.
The future of the high-rise building.
Adaptation and modernization of the listed buildings.

Basic bibliography:

1. Derek Osborn, Introduction to building, Michell, London, 1991
2. Francis D.K. Ching, Building Illustrated, Van Nostrand Reinhold, New York, 1991
3. Sylvia Leydecker, Nano Materials In Architecture and Interior Architecture and Design, Birkhauser Verlag AG, 2008
4. Tomasz Błaszczyński, Durability and repair of building structures, DWE, Wrocław, 2010
5. Tomasz Błaszczyński, Barbara Ksit, Bogdan Dyzman, Podstawy budownictwa zrównoważonego z elementami certyfikacji energetycznej, DWE, Wrocław, 2012
6. Pakiet do projektowania budynków pasywnych PHPP, PIBP, 2006
7. Praca Zbiorowa, Budynki pasywne mistrzowie oszczędzania energii. Rozwiązania i przykłady obliczeń, KRES, 2006

Additional bibliography:

1. Mieczysław Kamiński, Józef Jasiczak, Wiesław Buczkowski, Tomasz Błaszczyński, Trwałość i skuteczność napraw obiektów budowlanych, DWE, Wrocław, 2007
2. Mieczysław Kamiński, Józef Jasiczak, Wiesław Buczkowski, Tomasz Błaszczyński, Współczesne metody naprawcze w obiektach budowlanych, DWE, Wrocław, 2009
3. Mieczysław Kamiński, Józef Jasiczak, Wiesław Buczkowski, Tomasz Błaszczyński, Trwałe rozwiązania naprawcze w obiektach budowlanych, DWE, Wrocław, 2010
4. Tomasz Błaszczyński, Jacek Wdowicki, Betonowe budynki wysokie, w: Konstrukcje budynków, Budownictwo Ogólne, tom 4, Arkady, Warszawa, 2009
5. Tomasz Błaszczyński, Trwałość budynków i budowli, DWE, Wrocław, 2012

Result of average student's workload

Activity	Time (working hours)
1. participation in lectures	30
2. participation in project classes	30
3. participation in the consultation	10
4. preparation to attend and pass the examination	22
5. project realisation	20

Student's workload

Source of workload	hours	ECTS
Total workload	100	4
Contact hours	70	3
Practical activities	60	2