

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Sustainable Buildings</b>		Code <b>1010115121010105024</b>
Field of study <b>Civil Engineering Extramural Second-cycle</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>1 / 2</b>
Elective path/specialty <b>Structural Engineering</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>Second-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: <b>10</b> Classes: <b>18</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>2</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>2 100%</b> <b>2 100%</b>
<b>Responsible for subject / lecturer:</b> Barbara Ksiti email: barbara.ksiti@put.poznan.pl tel. 61 665 28 61 Wydział Budownictwa i Inżynierii Środowiska ul. Piotrowo 5, 60-965 Poznań		<b>Responsible for subject / lecturer:</b> prof. nadzw. dr hab. Inż. Tomasz Z. Błaszczczyński email: tomasz.blaszczynski@put.poznan.pl tel. 61 665 28 61 Wydział Budownictwa i Inżynierii Środowiska ul. Piotrowo 5, 60-965 Poznań
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	The basic knowledge from the construction engineering.
2	<b>Skills</b>	Best to design the building.
3	<b>Social competencies</b>	The consciousness of the necessity of continuous updating and supplementings of the building knowledge and engineer skills.
<b>Assumptions and objectives of the course:</b> The delivery the maximum of the knowledge from the contemporary construction engineering.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Student knows rules of the creations of the ecological and sustainable 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]		
<b>Skills:</b>		
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]		
<b>Social competencies:</b>		

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 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.  
Energy 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  
Arboral structures.  
Forensic engineering.  
Engineers versus terrorists.

#### Basic bibliography:

1. Gaczek Mariusz, Jasiczak Józef, Kuiński Marek, Siewczyńska Monika, Izolacyjność termiczna i nośność murowanych ścian zewnętrznych. Rozwiązania i przykłady obliczeń, Wydawnictwo Politechniki Poznańskiej 2011
2. Praca zbiorowa, Budownictwo Ogólne: Elementy budynków podstawy projektowania, t. 3, Arkady, 2008
3. Schabowicz Krzysztof, Pietraszek Piotr, Hoła Jerzy, Obliczanie konstrukcji budynków wznoszonych tradycyjnie, DWE, 2010
4. Gorzelańczyk Tomasz, Schabowicz Krzysztof, Materiały do ćwiczeń projektowych z budownictwa ogólnego, DWE, 2009 (wyd. II ? 2011)
5. Neufert Ernst, Podręcznik projektowania architektoniczno ? budowlanego, Arkady, 2009
6. Bożenna Wapińska, Mirosława Popek, Podstawy budownictwa. Podręcznik, WSiP, 2009
7. Kotwica Janusz, Konstrukcje drewniane w budownictwie tradycyjnym, Arkady, 2006

<b>Additional bibliography:</b>		
1. Żenczykowski Wacław, Budownictwo Ogólne, t. 2.1, 2.2, 3.1, 3.2, Arkady 1987		
2. Korzeniewski Włodzimierz, Budownictwo jednorodzinne. Wymagania użytkowe i warunki techniczne, COIB, 1998		
3. Michalak Hanna, Pyrak Stefan, Domy jednorodzinne. Konstruowanie i obliczanie, Arkady, 2000		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
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	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	50	2
Contact hours	40	2
Practical activities	40	2