

COURSE DESCRIPTION CARD		
The name of the course/module RESEARCH-PROJECT DESIGN STUDIO WATER IN ARCHITECTURE		Code A_K_2.2_004
Main field of study ARCHITECTURE	Educational profile (general academic, practical) general academic	Year / term I/2
Specialization	Language of course: polish/english	Course (core, elective) core
Hours Lectures: 15 Classes: - Laboratory classes: - Projects / seminars: -		Number of points 1
Level of qualification: II	Form of studies (full-time studies/part-time studies) Full-time studies	Educational area(s) ECTS division (number and %) Technical Sciences 1 100%
Course status in the studies' program (basic, directional, other) directional		(general academic, from a different major) general academic
Lecturer responsible for the course/lecturer: dr hab. inż. arch. Anna Januchta-Szostak, prof. nadzw. e-mail: anna.januchta-szostak@put.poznan.pl Faculty of Architecture ul. Nieszawska 13C, 61-021 Poznań tel.: 061 665 32 60		
Prerequisites defined in terms of knowledge, skills, social competences:		
1	Knowledge:	<ul style="list-style-type: none"> ▪ student has explicit, theoretically based knowledge including the key issues of architecture and urban planning as well as landscape architecture, ▪ student has knowledge required for the understanding of social, economic, legal and other determinants outside the engineering field of architectural designing and urban planning,
2	Skills:	<ul style="list-style-type: none"> ▪ student can acquire information from field specific literature, data bases and other properly selected sources in Polish and English, can integrate the acquired information, interpret the said information, as well as draw conclusions and come up with opinions supported with satisfactory reason,
3	Social Competences:	<ul style="list-style-type: none"> ▪ student understands the need for lifelong learning, ▪ is aware of the social role of the architect and liability for affecting decisions.
Objective of the course:		
<ul style="list-style-type: none"> ▪ Gaining the increased knowledge in the scope of selected and detailed issues of architectural designing and urban planning as well as principles of sustainable spatial planning, including the role of water in architecture in aesthetic, compositional, functional, economic, environmental and administrative as well as legal aspects. ▪ Learning the latest tendencies in the scope of architecture and urban planning, especially ecological design and connection between spatial planning and water economy (water-sensitive planning & design, rainwater/stormwater management, SUDS - sustainable urban drainage systems etc.). ▪ Learning methods and ways of implementation of the latest scientific achievements in the scope of architecture and urban planning as well as fields connected with the field of study being studied, including sustainable systems of rainwater/stormwater management and revitalization and renaturalisation of river valleys on the urbanized areas. ▪ Preparation to the scientific researches. Gaining theoretical knowledge required for development of research project in the framework of the course: Research-project design studio B. 		
Learning outcomes		
Knowledge:		
W01	has knowledge required for the understanding of social, historical, natural, economic, legal and other determinants outside the engineering field of the engineering activities and has basic knowledge of quality management, in this of the sustainable development management of new settlement and of shaping the environment of man with the account for the relations between people and architectural objects and the surrounding space;	AU2_W03

W02	has detailed knowledge of architectural designing in the inter-disciplinary meaning, with the account for cultural context, and for private, semi-private and public space.	AU2_W06
Skills:		
U01	can acquire information from field specific literature, data bases and other properly selected sources in Polish and English, can integrate the acquired information, interpret and critically assess the said information, as well as draw conclusions and come up with opinions supported with satisfactory reasons;	AU2_U01
U02	can assess the usefulness of the new scientific and research achievements and apply them in the field of architecture and town planning.	AU2_U10
Social competences:		
K01	student understands the need of continuous self-education, improvement of professional, personal and social competences;	AU2_K04
K03	is aware of the importance of non-technical aspects and effects of engineering activities, in this impact upon the environment and liability for environment affecting decisions.	AU2_K05
The evaluation methods:		
<p>A series of lectures of the course: Research-project design studio A: Water in Architecture is a theoretical basis to implementation of research project during classes of: Research-project design studio. Lectures end with independent credit. There are proposed two terms of credit, but the second term is resit exam.</p> <p>Formative assessment: active participation in lectures, confirming with attendance at 3 from 7/8 lectures. Final grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0</p> <p>Summative assessment: Grade for preparation of short research elaboration or grade for test covering the lectures contents. Final grading scale: 3,0; 3,5; 4,0; 4,5; 5,0</p> <p>Positive grade for module depends on achieved by student all learning outcomes specified in the syllabus.</p>		
Course contents		
<ol style="list-style-type: none"> 1. Water in architecture – problems and advantages. Perception of water role in the city. Aquatic Culture. Problems related to water and advantages of water in the scale of city, place, building. 2. The role of water in architectural composition. Perceptual and behavioral potential of water. Scale of water elements perception. Water elements of landscape inside. Compositive effects. Social impact of water elements. Typology of water elements in two-dimensional, three-dimensional and four-dimensional composition. Water as a medium of beauty and essence in the landscape – analysis of symbolism, visual, emotional and behavioral values. 3. Waterfronts in the urbanized landscape. Waterfronts – redefinition of concept. Transformation of waterfronts – development and degradation of urban aquatic areas. River – city visiting-card – specifics and functions of urban aquatic areas. 10 principles of waterfronts revitalization. Examples of urban waterfronts revitalization. Rotterdam, Amsterdam, Hamburg, New York, Barcelona. 4. Activation and revitalization of river valleys in the cities. The role of river valley in functional and spatial structure of city – point of contact of natural and cultural environment – holistic approach. Causes and effects of degradation of urban water-courses. Goals, methods and good practices of urban and natural revitalization of urban riverside areas. Riverside buffer parks. 5. Threats related to water against processes of urbanization and global climatic changes in the term of EU directives and water legislation. Global changes of climate and their impact on destabilization of water economy. Types of floods and reasons for the increase of flood risks: hydro-meteorological and anthropogenic causes (effects of urbanization processes and transformations of drainage areas). Flood protection methods in Europe. Management of river valleys and integrated management of flood risk in the term of legislation: Water Framework Directive, Floods Directive, Water Legislation. Colonization in coexistence with water – drainage areas approach in urban planning, case study. 6. Rain in the city 1 - sustainable rainwater/stormwater management – SUDS systems / TRIO catalog. Traditional systems of storm-water drainage and ecological systems of rainwater drainage management in the cities. Problems and aims of sustainable rainwater management. World tendencies in the scope of ecological design and connections between spatial planning and water economy (water-sensitive planning & design, rainwater/stormwater management, SUDS - sustainable urban drainage systems etc.). Catalog of forms of TRIO systems serving for transportation, retention, infiltration and rainwater purification. 7. Rain in the city 2 - sustainable rainwater/stormwater management – case study. Analysis of examples of SUDS application in Scharnhäuser Park in Ostfildern, Arkadien Asperg near Stuttgart, Kronsberg – Hannover, Potsdamer Platz in Berlin, Mokotów Marina in Warsaw, Portland in Oregon state and others. 8. The water role in formation of public space – examples of integrated approach to designing. Discussion of research aims, methods and tools serving for integrated designing of urbanized areas. Introduction to development of research project in spring term. 		
Basic bibliography:		
<ul style="list-style-type: none"> - Dyrektywa 2000/60/EC Parlamentu Europejskiego i Rady z dnia 23 października 2000 r. w sprawie ustanowienia ram dla działalności Wspólnoty w dziedzinie polityki wodnej (tzw. <i>Ramowa Dyrektywa Wodna</i> – 		

RDW)

- Dyrektywa 2007/60/WE Parlamentu Europejskiego i Rady z dnia 23 października 2007 r. w sprawie oceny ryzyka powodzi i zarządzania nim (tzw. *Dyrektywa Powodziowa*)
- Dreiseitl H., Grau D., Ludwig K.H.C., *Waterscapes. Planning, Building and Designing with Water*, Birkhäuser, Basel-Berlin-Boston 2001.
- Januchta-Szostak A., *Woda w miejskiej przestrzeni publicznej. Modelowe formy zagospodarowania wód opadowych i powierzchniowych*, seria: Rozprawy nr 454, Wyd. Politechniki Poznańskiej, Poznań 2011.
- Januchta-Szostak A., *Front wodny Poznania - Dolina Warty. Rewitalizacja związków z rzeką / Poznań Waterfront – Warta Valley. Revitalisation of the relationship with the river*, Wyd. Politechniki Poznańskiej, Poznań 2011.
- Niemczyk E., *Cztery żywioły w architekturze*, Ossolineum, Wrocław 2002.
- Ustawa z dnia 18 lipca 2001 r. Prawo wodne (Dz.U. z 2005 r. nr 239 poz. 2019 z późn. zm.)
- Wylson A., *Aquatecture. Architecture and Water*, Van Nostrand Reinhold, New York 1986.

Supplementary bibliography:

- Geiger W., Dreiseitl H., *Nowe sposoby odprowadzania wód deszczowych*, Oficyna Wydawnicza Projprzem-Eko, Bydgoszcz 1999.
- Januchta-Szostak A., *Usługi ekosystemów wodnych w miastach*, (w:) T. Bergier, J. Kronenberg (red.) *Zrównoważony Rozwój — Zastosowania. Tom 3. Przyroda w mieście*. Wyd. Fundacja Sendzimira, Kraków 2012, s. 91-110, www.sendzimir.org.pl; http://sendzimir.org.pl/images/Zrównoważony_Rozwój_Zastosowania-3.pdf
- Kaniecki A., *Poznań. Dzieje miasta wodą pisane*, Wyd. PTPN, Poznań 2004.
- Kołtuniak J. (red.), *Rzeki. Kultura, cywilizacja, historia*, t. 1-10, wyd. Śląsk, Katowice 1992-2002.
- Kowalczak P., *Wodne dylematy urbanizacji*, Wyd. Poznańskie, Poznań 2010.
- Moore Ch., *Water and Architecture*, Thames & Hudson, New York 1994.
- SUDS – *Sustainable Urban Drainage Systems*. CIRIA, www.ciria.org/suds
- *Woda w krajobrazie miasta / Water in the Townscape*, Januchta-Szostak A. (red.), Tom 1-2/2009, tom 3-4/2011, Wyd. Politechniki Poznańskiej, Poznań 2009, 2011.

The student workload

Form of activity	Hours	ECTS
Overall expenditure	28	1
Classes requiring an individual contact with teacher	1	0
Practical classes	0	0

Balance the workload of the average student

Form of activity	Number of hours
participation in lectures	15 h
participation in classes/ laboratory classes (projects)	0
preparation for classes/ laboratory classes	0
preparation to colloquium/final review	12 h
participation in consultation related to realization of learning process	1 h
preparation to the exam	0 h
attendance at exam	0 h

Overall expenditure of student: **1 ECTS credit** **28 h**

As part of this specified student workload:

- activities that require direct participation of teachers:

15 h + 1 h = 16 h

1 ECTS credit