Subject description

Faculty of Architecture, WUT 2020, **Architecture** studies

Architecture for Society of Knowledge speciality

KNOWLEDGE MANAGEMENT IN ARCHITECTURE		ASK-KH-Km	MSc level	semester 1
Classes: **lecture** **seminar**	Hours/semester **15** **15**	Student's own workload hours: **17**	Status: **obligatory** Level: Advanced Context: history / theory	ECTS: **2**
				Exam: **no**

Unit delivering this subject: Katedra Projektowania Architektonicznego
Pracownia Projektowania Architektonicznego Wspomaganego Komputerem
Subject coordinator: dr hab. inż. arch. Krzysztof Koszewski

Learning outcomes and subject delivery methods

Objective of the course:

The aim of the course is to familiarize students with knowledge management from the point of view of the design process. The information and skills acquired raise importance of knowledge management and show project activities as being based on well-grounded knowledge. It will also show the important role of gathering, sharing and managing knowledge about cultural and architectural heritage, as an important and relevant matter in the design process.
Course presents the project activity as an alternative method of learning the reality, in accordance with the concept of "research by design". Presentation of such concepts according to economic changes in the society of knowledge and the so-called "creative economy." A more general goal is to indicate the important role and mission of the architect (designer) in a knowledge-based society.

General description of the course:

The subject consists of a series of lectures and seminars. The lecturer provides basics of knowledge management in architecture in general and detailed range, regarding architectural heritage. Practical solutions for this area, are part of the seminar. Specific tasks regarding the description of historic buildings in the context usefulness for project activities are an exemplification of discussed issues. It also brings the subject of modern techniques application into heritage protection.

Scope of taught competencies:

Understanding and identifying differences in the nature of information used in the design process
Differentiating between information and knowledge, skill in utilizing the potential of accumulated knowledge
Awareness of the complexity of the design process with respect to applied information and knowledge held
Skill in utilizing information sources
Basic skills in publishing information

Learning outcomes:

No. of the outcome/ area	Description
Knowledge	
W_01	Student has a well-structured knowledge about knowledge management in the design process
W_02	Student has knowledge about the use of new tools and knowledge management techniques.
W_03	Student has knowledge about collecting, managing and sharing knowledge about architectural and urban heritage
Skills	
U_01	Student effectively uses the available sources of information and valorise their credibility and usefulness in the design process.
U_02	Student organises information and creates simple knowledge management systems
U_03	Student publishes information in a way that allows them to be used in the design process
Social competences	
KS_01	Student understands necessity of constant improvement of knowledge as a basis for project activities
KS_02	Student knows of the role and mission of the architect in contemporary social changes

Learning contents:

Basics in information theory and aspects of the concept of knowledge (philosophical, psychological, and economic). Basics in knowledge management. Knowledge in systems supporting decision–making—expert systems. Relations between knowledge management and the design process, including its specifics. Efforts at formalizing the design process and the "design computation" concept. Basics in description standardization. The concept of meta–data. Applying standards (e.g. STEP). Descriptive standards as applied in practice in matters of cultural and architectural heritage protection. Technical aspects of creating standards. Accessible databases and knowledge bases, research projects in knowledge management (e.g. MACE), and the integration of distributed data.

Teaching methods and forms :

Exercises: Creation of a database/knowledge base containing descriptions and qualities as well as rules relating to selected building of historical value, and the collection, assessment, verification, and evaluation of information. Parameterization of certain elements of the description and the publication of a database.

Method of testing the learning outcomes:

Outcome Number	Way of testing
Knowledge	
W_01	Lectures: final colloquium
W_02	Seminar: final work evaluation
W_03	Lectures: final colloquium, seminar: final work preparation
Skills	
U_01	Seminar: progress of work presentation
U_02	Seminar: final work evaluation
U_03	Seminar: assigning work evaluation by the participants
Social competences	
KS_01	Seminar: assessment of activity in ongoing discussions, final work evaluation

KS_02	Lectures: final colloquium, assessment of activity in ongoing discussions, final work evaluation

Literature:

- FOQUÉ, R. (2010). Building knowledge in architecture. Brussels, UPA.
- MITCHELL, W. J. (2005). Placing words. Cambridge, Mass, MIT Press.
- INTERNATIONAL CONFERENCE ON COMPUTER AIDED ARCHITECTURAL DESIGN FUTURES, MCCULLOUGH, M., MITCHELL, W. J., & PURCELL, P. (1990). The Electronic design studio: architectural knowledge and media in the computer era. Cambridge, Mass, MIT Press.
- ZAMBELLI, M., JANOWIAK, A. H., & NEUCKERMANS, H. (2008). Browsing architecture: metadata and beyond. Stuttgart, Fraunhofer IRB Verlag.
- WINGERT-PLAYDON, K., & NEUCKERMANS, H. (2007). Emerging research + design: ARCC/EAAE conference proceedings 2006, Philadelphia, May 31-June 4 2006. [Philadelphia, PA], Architectural Research Centers Consortium.
- EUROPEAN ASSOCIATION FOR ARCHITECTURAL EDUCATION, & GELTING, A. K. (2008). Changes of paradigms in the basic understanding of architectural research: architectural research and the digital world ; EAAE/ARCC conference proceedings, 25th to 28th June 2008. Copenhagen, The Royal Danish Academy of Fine Arts, School of Architecture.
- THORNES, R., & BOLD, J. (1998). Documenting the cultural heritage. Los Angeles, Calif, Getty Information Institute.
- UK OFFICE FOR LIBRARY NETWORKING. (2005). Technical guidelines for digital cultural content creation programmes. Roma, Minerva Project.
- PORTER, V., & THORNES, R. (1994). A guide to the description of architectural drawings. New York, G.K. Hall.