

REPAIR AND MAINTENANCE ENGINEERING

Subject code: **06.4-WILŚ- BUD- IKO- RC05**

Subject type: Obligatory

Language of instruction: English

Responsible for the subject: Person currently conducting lectures

Providing education: Department of General Construction

Type of class	Number of classes per semester	Number of classes per week	Semester	Type of credit	ECTS points
Full time studies					5
Lecture	30	2	II	exam	
Project	30	2		credit with a grade	
Part time studies					
Lecture	18	2	II	exam	
Project	18	2		credit with a grade	

SUBJECT OBJECTIVE:

Skills and competences in the field of designing and performance of conservation work in the construction industry.

INITIAL REQUIREMENTS:

General construction. Building Materials. History of architecture. Technology of renovation work.

SUBJECT SCOPE:

Lecture

Methodology of conservation research. Research program. Preparatory work - inventory documentation, opinions, evaluations, expert opinions. Scientific and research work - archival research, field research. Historical and conservation documentation of the object. Conservation applications.

Old and contemporary construction materials.

Principles of conservation work in construction. Land and foundations. Walls and pillars. Insulation. Ceilings and vaults. Wooden constructions. Roofing. Joinery, locksmith. Plasters. Floors and floors.

Walls in historic buildings. Test methods.

Principles of conservation of brick walls and stone architectural details. Methods and means used in conservation of brick walls and stone architectural details.

Maintenance and protection of wooden elements.

Conservation of ruins. Stages of proceeding in the process of protecting ruins. Conditions for survival.

Building Code and conservation of monuments. Cooperation with conservation services. Technical and legal principles in facilities requiring preservation of cultural heritage.

Project classes

Assessment of the technical condition of a historical building.

EDUCATIONAL METHODS:

Lecture conventional, problem oriented, with a programme text
 Project problem oriented methods – case study/
 Practical-exercise method – observation method, method for field measurements

EDUCATION RESULTS:

Results after completion of the course	Symbol	Verification method	Type of class
Knowledge			
The student knows the rules of conservation work in construction related to land, foundations, walls, pillars, insulation, ceilings, vaults, wooden structures, roofing, joinery, plasters	K_W04 K_W09	Exam with points	L
Abilities			
The student can assess the technical condition of a building	K_U05	Test of abilities, completion of a project	P
Social competences			
The student can determine the importance of maintenance of individual building elements in the process of protection of historical buildings	K_K02 K_K03	conversation during lectures initiated by the teacher; checking competences during the introduction to classes	L, P

REQUIREMENTS TO OBTAIN A CREDIT:

Lecture A credit based on a test with points:
 50% - 60% correct answers – satisfactory,
 61% - 70% satisfactory plus,
 71% - 80% good,
 81% - 90% good plus,
 91% - 100% very good.

Project The condition for a credit is a positive grade for all projects (2 projects) and for a written test with points.

Credit for the subject: The final grade is the average of the grades: $G = (L+P)/2$

STUDENT WORK:

Interaction with the teacher	30l+30p +20cons , total	80 h
Projects – individual work	2proj x 30h	60 h

Preparation for the exam		10 h
Total	80+ 60+10	150 h
ECTS for the subject	150/30	5 ECTS.

BASIC LITERATURE:

1. Borusiewicz W.: Konserwacja zabytków budownictwa murowanego. Arkady, Warsaw 1985.
2. Kadłuczka A.: Konserwacja zabytków i architektoniczne projektowanie konserwatorskie Wydawnictwo Politechniki Krakowskiej, Kraków 1999.
3. Kowalski T. Rekonstrukcja zabytków architektury. Teoria a praktyka. Wydawnictwa PKZ, Warsaw 1985.
4. Małachowicz E.: Konserwacja i rewaloryzacja architektury w zespołach i krajobrazie. Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 1994
5. Zin W. praca zbiorowa Zabytki urbanistyki i architektury w Polsce . Odbudowa i konserwacja. Arkady, Warsaw 1986.
6. Materiały konferencyjne VII Forum Konserwatorów „Konserwacja Architektury ceglanej i kamiennego detalu architektonicznego” Toruń 2004.

COMPLEMENTARY LITERATURE:

1. Inżynieryjne Problemy Odnowy Staromiejskich Zespołów Zabytkowych, Konferencja Naukowo-Techniczna, Kraków, Politechnika Krakowska.
2. Czasopismo Renowacje

UWAGI:

Field studies

SYLLABUS PREPARED BY:

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