

Title Geology and Hydrology	Code 1010101231010130342
Field Environmental Engineering First-cycle Studies	Year / Semester 2 / 3
Specialty -	Course core
Hours Lectures: 2 Classes: - Laboratory: - Projects / seminars: 2	Number of credits 4
Language polish	

Lecturer:

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Status of the course in the study program:

Core course.

Assumptions and objectives of the course:

Acquaintance with basic knowledge on geological structure of Earth, including natural resource, then knowledge on genesis and usage of underground water and surface water and mechanisms influencing hydrologic processes.

Contents of the course (course description):

Classification of sciences on the Earth. Geological structure of the Earth. Natural resources especially energy resources. Soil ? its importance and agricultural usage. Basic hydrologic properties of rocks. Underground waters: genesis, classification and characteristics. Protection of underground waters. Factors and mechanisms influencing hydrologic processes. Hydrographic systems. Surface waters. Hydrological cycle. Balance of water in a catchment. Water resources. Thermal and dynamic processes in inland waters. Runoff. Routs and phases of runoff. Hydrologic losses. Rainfall-runoff models for a catchment. Stages of water. Classification of stages. Gauges of water stages. Characteristic curves of stages and their practical application. River discharges. Techniques of measurements. Rating curve. Characteristic discharges. Discharges for a given probability of exceedance ? an interpretation and methods of evaluation for controlled and uncontrolled rivers. Analysis of flood and drought flows.

Introductory courses and the required pre-knowledge:

Knowledge acquired from secondary school within subjects: Geography and Science on Earth.

Courses form and teaching methods:

Lectures and projects.

Form and terms of complete the course - requirements and assessment methods:

Written tests (lectures) and reports within project.

Basic Bibliography:

1. Pazdro Z. Hydrogeologia ogólna Wydawnictwo geologiczne Warszawa 1983
2. Byczkowski A. Hydrologia t. 1 i 2, Wydawnictwo SGGW Warszawa 1996
3. Ozga-Zielińska M. , Brzeziński J. Hydrologia stosowana PWN Warszawa 1994
4. Bajkiewicz-Grabowska E., Mikulski Z. Hydrologia ogólna PWN Warszawa 1993
5. Soczyńska U. Hydrologia dynamiczna PWN Warszawa 1997

Additional Bibliography: