

**01S1-MELIO**

**LAND RECLAMATION**

**ECTS: 3.0**

**HOURS PER SEMESTER/WEEK:** LECTURES: 15/1; CLASSES: 15/1

#### **COURSE CONTENTS**

**LECTURES:** The concept of land reclamation and environmental shaping. The impact of land reclamation on the environment. Methods for determining the needs of land reclamation. Genesis, typology and environmental conditions for shaping water resources. The role of land reclamation in eco-development. Examples of the application of the principles of eco-development in water management in the environment natural. Principles of water management in micro and macro catchments. Influence drainage for biological and landscape diversity. Human interference in the water cycle - Enriching resources and reducing shortages in the environment. Soil erosion.

**CLASSES:** Area measurement on maps. Water balance of the catchment area. Water balance of the area. Methods and rules for measuring velocity and flow rate in natural and artificial watercourses. Rules river regulation for agriculture. Methods for determining the water needs of plants. Surpluses and water shortages of crops. Drainage - rules for determining needs dehydration. Recognition of the needs for land reclamation of arable land. Irrigation methods grassland and arable land. Protection of the drainage network against damage. Theoretical assumptions and methodology of using agricultural irrigation. Specific recognition of the functioning of subsoil irrigation, sprinkler irrigation systems and micro-hydration. Organizational assumptions for the operation and maintenance of systems drainage. Cost estimate - calculation of drainage investment costs.

**EDUCATIONAL PURPOSE:** The scope and specificity of activities related to water reclamation. Issues related to the needs and possibilities of regulating water resources in the environment, with the impact of various drainage treatments on the natural environment.

#### **LEARNING OUTCOMES**

**Knowledge.** Demonstrates knowledge of basic methods, techniques and tools in the implementation of the regulation of water resources in the environment. Has knowledge of the impact of land reclamation on the shaping of the environment and its biodiversity. Has a basic knowledge of the influence of environmental factors on the need to regulate air-water relations of soils ensuring proper.

**Skills.** Has the ability to search and use information from various sources necessary to prepare records of land reclamation systems. Has the ability to work with maps and design in simple scales items.

**Social competences.** Understands the need to constantly expand and supplement knowledge related to regulation air-water relations in the agricultural environment. Is able to work independently and is aware of the risk of human interference in environment.

#### **TEACHING FORMS AND METHODS**

**Lectures.** Information lecture with multimedia presentation.

**Classes.** Design exercises with a multimedia presentation..

#### **FORM AND CONDITIONS FOR VERIFICATION OF LEARNING OUTCOMES**

**Lectures.** Written test - credit with a grade.

**Classes.** Written completion of the theoretical part of the exercises and evaluation of the correctness of the project..

#### **BASIC LITERATURE**

1) Prochal P., Podstawy melioracji rolnych, Tom 1, Wyd. Wyd. SGGW Warszawa, 1986. 2) Kaca E., Ćwiczenia z melioracji rolnych - deszczownie, Wyd. Wyd. SGGW Warszawa, 1988. 3) Marcilonek S., Eksploatacja urządzeń melioracyjnych, Wyd. Wyd. AR Wrocław, 1994. 4) Bajkiewicz-Grabowska E., Hydrologia ogólna, Wyd. Wyd. SGGW Warszawa, 1999. 5) Wanke A., Jędryka G., Projektowanie i wykonawstwo drenowań rolniczych - ćwiczenia. ,Wyd. SGGW Warszawa, 2001.

#### **ADDITIONAL LITERATURE**

1) Prochal P., Podstawy melioracji rolnych, Tom 2, Wyd. Wyd. PWRiL Warszawa, 1967. 2) Cieśliński Z., Agromelioracje w kształtowaniu środowiska rolniczego, Wyd. Wyd. AR im. Augusta Cieszkowskiego w Poznaniu, 1997. 3) Żelazo J., Popek Z., Podstawy regulacji

#### **THE TEACHER/S CONDUCTING THE CLASSES:**

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