

University of Agricultural Sciences and Veterinary Medicine of Iasi
Faculty of Horticulture
Specialization: Environmental Engineering

Discipline: DESIGNS AND HYDRO-TECHNICAL CONSTRUCTIONS

Study year : (III nd Year of study, Vrd SEMESTER)

Credit value : 4

Course category:

Domain (Imposed)

Course holder: Lecturer Ph.D.Eng. ESMERALDA CHIORESCU

Discipline objectives:

The discipline aims to develop competences regarding the assimilation of theoretical and practical knowledge regarding: identification of the structural and functional role of the component elements of the hydrotechnical constructions, assessment of the quality of a hydrotechnical arrangement / construction using specific evaluation criteria, the constructive composition of the different categories of hydrotechnical constructions and constructions sizing their construction elements.

Contents (syllabus)

Course (chapters/subchapters)
1. Getting started
2. Water management and water quality protection:
3.Uses of water
4. The importance of water deficit and excess
5. Hydropower development and construction
6. Arrangements and hydro-technical constructions for water transport
7. Hydropower development and construction
8. Hydro-ameliorative hydro-technical arrangements and constructions
9. Hydrotechnical designs and constructions for combating soil erosion
10. Arrangements and hydro-technical constructions for river and embankment regularization
11. Hydrotechnical arrangements and constructions for fish farming and fish farming
12. General hydrotechnical constructions for retention and bypass
13. Accidents and damage to hydrotechnical constructions
14.The ecological impact of the hydrotechnical arrangements and constructions on the environment:

Practical works
1. Processing of meteorological and hydrological data from the area established for the study
2. The riverbed of a watercourse. The limnometric key
3. Determining the maximum flow rates in case of use: Pearson probability curve and the empirical probability curve
4. Applications regarding the average critical driving speed and critical sedimentation speed
5. Evaluation of alluvium transport and the stability of the riverbed.
6. Dimensioning of a system of water management for uses and large waters
7. Exploitation of water management systems
8. S.A.H. (Hydrotechnical development system) based on accumulation
9. S.A.H. debt regulation
10. S.A.H hydropower
11. S.A.H specific

Bibliography:

1. Chiorescu Esmeralda, -Note de curs
2. Diaconu D., 1988 - *Râurile de la inundație la secetă*, Ed. Tehnică, București
3. Giurmă I., 2000- *Sisteme de gospodărire a apelor*, Ed. Ceram, Iași
4. Giurmă I., 2010 - *Managementul integrat al apelor*. Ed. Politehnicii, Iași.
5. Ichim I., 1986 - *Efectele barajelor în dinamica reliefului*. Ed. Academiei, București.
6. Vîrsta Ana, 2005 - *Gospodărirea apelor*, Ed. Cartea Universitară, București

Evaluation:

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	written examination	60%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	40%

Course holder:

Lecturer Ph.D.Eng

CHIORESCU ESMERALDA

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