Hidrobiology (IIIrd Year of study, Ist Semester)

Nr. credite transferabile 6

Statutul disciplinei
Specialized (Imposed)

Titular disciplină
PhD, Lecturer Valerica GÎLCĂ

Discipline objectives (course and practical works)

Discipline "Hydrobiology" according to the analytical program aims: to determine physical and chemical characteristics of aquatic ecosystems; description of morphological characters and behavioral characteristics of living things; the effects of variation of abiotic factors on living creatures; explaining the causes of the structure of an aquatic ecosystem; developing strategies for prevention and reduction of pollution of aquatic ecosystems.

Specific objectives for students, at the course and practical work will be:

- To know the main types of water and the physico-chemical properties;
- Identify aquatic biocenoses and their characteristics;
- Know each biocoenosis aquatic biology;
- Identify abiotic elements of aquatic ecological communities and their role on hydrobiontes;
- Know the main factors which influence hydrobiontes;
- Know the structure of each aquatic biocenoses.

Contents (syllabus)

Course (chapters/subchapters)
Water characteristics. ***Water organoleptic characteristics***: taste, smell, color. The physical characteristics of water: transparency, turbidity, sedimentation, specific heat, heat of evaporation latent temperature of melting ice; the temperature of solidification of water, thermal conductivity, density of water or specific gravity, surface tension, viscosity, hydrostatic pressure, temperature and light. ***Chemical characteristics of the water***: salinity, biogenic substances (nitrogen, phosphorus, calcium, silicon, iron, magnesium, manganese, copper); water gas (oxygen, ozone, carbon dioxide, nitrogen, hydrogen sulfide, methane).
Characteristics of aquatic ecosystems. ***Features of biocenoses***: biocoenosis aquatic plankton, pleuston, necton; Biocenoses of bental.
Hydrobiontes adjustments: adjustments benthon's hydrobiontes; Adjustments of sedentary endo benthos; Vagil benthos adjustments; Adjustments of endo benthos.
Potamology: Rivers: hydrological regime, current velocity, thermal rivers, transparency and suspension, substances creditworthy, hardhness, gas regime.
Rivers' biocoenoses. Rhytronl: phytoplankton, zooplankton, bacterioplancton; Potamon: phytoplankton, zooplankton, bacterioplancton; Rivers' necton; Benthos: phytobenthos, zoobenthos.
Limnology. ***Lakes***: Lakes Ecological Classification; Abiotic factors which determine life in lakes; Hydrological regime; Dynamics of Water; Classification lakes after thermal regime.
Populations and the lakes biocenoses. Plankton: phytoplankton, zooplankton; The neuston; Necton; Benthos.

Puddles, lakes and ponds. Biology of lakes and ponds: phytoplankton, zooplankton; Necton of lakes and ponds; Benthos.
Telmatology. Swamps: Living in swamps; abiotic factors; populations and the biocenoses of swamps.
Water purification. Mechanical filtering. Biological treatment.
Self-cleaning of dirty water. Self-purification. Factors influencing the self-cleaning
Drinking water resources. Water resources. Drinking water quality. Damage aquatic ecosystems

Practical works
Labor protection in the analytical laboratory and field
Water Analysis. The purpose and methods of analysis. Water harvesting and preservation of evidence. Interpretation of results analysis.
Determining the physical and chemical properties of water. Determination of temperature, taste and smell. Determination of turbidity. Determination of color. Determination of pH
General characteristics of water. Determination of the suspension. Determining fixed residue. Determination of alkalinity and acidity
Determination of carbon dioxide. **Determination of nitrogen compounds**: ammonia determination; Determination of total nitrogen. Determination of nitrites and nitrates.
Determination of organic substances: Determination of oxygen; Determination of dissolved oxygen
Determination of total hardness: Determination of calcium and magnesium; Determination of sodium, potassium and lithium.
Phytoplankton. Harvesting phytoplankton. Methods for determining and evaluating phytoplankton
Zooplankton. Collection of zooplankton. Methods for determining and evaluating the zooplankton

Bibliography

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Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Oral examination	60%

Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	40%

Contact

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