

## **The Aquatic Ecology Laboratory**

is intended for activities that involve the use of equipment for the identification and determination of biological indicators and the use of sampling methods (dredging/threading/rinsing) to facilitate in-situ analyses.

**The aquatic ecology laboratory** has equipment which may be used for:

- sampling, sorting and sorting of samples;
- the in-situ identification and quantification of the biological quality indicators in the water mass and in the sediment: macroinvertebrates, zoobenthos, ichthyofauna, algae;
- establishing the quality of surface waters from a biological point of view, in accordance with the Water Framework Directive;
- in-situ monitoring of various accidental biological pollutions;
- establishing the human influence and pollution factors at the source on the entire course of the Danube;
- the study of the status of various natural and anthropogenic ecosystems from the point of view of the presence of various classes of algae as well as the kinetics of algae over cyclic time periods.

## **Members:**

- **Lecturer dr. biol. Maria Cătălina ȚOPA**

<https://dcfm.ugal.ro/index.php/membri>





# The Aquatic Ecology Laboratory

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## Equipment:

*Electronic taxonomic analysis kit: Axioscope 5 optical microscope, AxioZoom V16 stereomicroscope, Stemi 508 binocular magnifier, Bogorov camera, Petri dishes, Glass vials, Microscope slides, Primer V7 biological index analysis software, Carl Zeiss Microscopy GmbH*

## Uses:

- assessment of the biological quality of water;
- quantification and in-situ taxonomic determination of biological samples: macrozoobenthos, macrophytes, ichthyofauna;
- quantitative and qualitative analysis of the biological indicators of diversity, saprobity, similarity.

## Technical Specifications:

### Optical microscope Axioscope 5

- examination in transmitted light and bright field, phase contrast, revolver head with 6 objectives with achromatic plane 5X, 10X, 20X, 40X, 100X;
- 10x focusing eyepieces with minimum 23 mm flat field, C-mount optical adapter with 0.63x magnification;
- digital camera 8.3 megapixels;
- real-time data visualization and processing software.

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## Technical Specifications:

### Stereomicroscope AxioZoom V16

- motorized apochromatic optical system for examination in transmitted and incident light;
- continuous zoom;
- magnification ratio 16:1x;
- set of 16x eyepieces with a flat field of at least 14 mm;
- 1x objective, minimum aperture 0.25 and 1.5x apochromatic objective;
- touch screen control panel and joystick for controlling the zoom and focus functions;
- examination of transparent samples with cold LED light source, minimum 900lm, temperature of 6500K color, minimum 50,000 operating hours;
- circular incident illumination and incident illumination for both objectives;
- C-mount optical adapter;
- digital color camera and real-time data visualization and processing software;
- Core i7 computer.



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## Technical Specifications:

### Stemi 508 binocular magnifier

- continuous zoom;
- minimum magnification ratio 8:1;
- 10x eyepieces;
- operating the magnification and manual focus function;
- color digital camera.



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## Equipment:

*Field phytobenthic analyzer, Benthotorch, bbe Moldaenke Germany*

## Uses:

- differentiation of algae classes according to fluorescence excitation spectrum;
- in-situ determination of green algae, cyanobacteria and diatoms;
- determination of chlorophyll concentration on the surface or bottom of a water;
- fast and easy measurements of benthic algae, including measurement of algal differentiation.

## Technical Specifications:

- significant fluorescence excitation spectrum with fixed emission rate of 680 nm;
- 7 LEDs for fluorescence excitation emitting light at 3 wavelengths (470nm, 525nm, 610nm):
- data transfer to connected devices via USB,
- software usable for graphical representation of recorded databases.





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## Equipment:

*Refrigerator preservation system model LR – 270SxPRO, Evermed*

## Uses:

- storage and preservation of biological samples, without freezing, at a constant and adjustable temperature.

## Technical Specifications:

- automatic spring closing device and special door switch;
- "xPRO" control panel located in the upper part of the microprocessor-operated structure with touch buttons with automatic lock protection and color display;
- controller for monitoring the device's functions through the EEN interface with icons and written messages;
- bottom-mounted cooling unit with the condensing unit consisting of a hermetic compressor and a finned condenser, air-cooled by a fan.

