

Study programme(s): PhD in Ecology			
Level: PhD studies			
Course title: Water quality monitoring using freshwater macroinvertebrates			
Lecturer: dr Tamara Jurca			
Status: elective			
ECTS: 15			
Requirements: students is obliged to have passed the course Hydrobiology			
Learning objectives The course is focusing on the potential of littoral and profundal communities of aquatic macroinvertebrates as bioindicators in monitoring of freshwater ecosystems.			
Learning outcomes After the course students should be capable of identifying the most common species of aquatic macroinvertebrates, able to successfully analyse the results of the ecological status assessments (according to the Water Framework Directive) and use indicator systems (saprobic, diversity and multimetric indices) in water quality assessments.			
Syllabus <i>Theoretical instruction</i> History of the role of macroinvertebrates in biomonitoring. Freshwater invertebrates as bioindicators. Mechanisms of effects of ecological factors on macroinvertebrates communities. Identification of freshwater macroinvertebrates for purposes of ecological explorations. Data analysis and results discussion. Rapid assessment of the ecological status and biological aspect of water quality. Macroinvertebrates as model organisms in toxicity tests. Paleoreconstruction using the macroinvertebrates. <i>Practical instruction:</i> Laboratory practice would aim for students to differentiate the major taxonomic groups of aquatic macroinvertebrates.			
Literature 1. Rosenberg, D.M. & Resh, V.H. (1993) Freshwater Biomonitoring and Benthic Macroinvertebrates, Chapman and Hall, London. 2. Wright, J., Sutcliffe, D. & Furse, M. (1997) Assessing the biological quality of freshwaters. RIVPACS and other techniques. FBA, Ambleside, Cumbria, UK. 3. Karr, J. & Chu, E. (1999) Restoring Life in Running Waters: Better Biological Monitoring. Island Press, Washington, D.C. 4. Elliot, J. (1971) Some methods for the statistical analysis of samples of benthic invertebrates. Sci. Publ. 25. Freshwater Biological Association, Ambleside, Westmorland, U.K 5. Loeb, S. & Spacie, A. (1993) Biological Monitoring of Aquatic Systems. Lewis Publishers			
Weekly teaching load			Other:
Lectures: 2	Exercises: 2	Other forms of teaching:	
Teaching methodology Lectures - oral presentation using pptand video bim, practical part – identification of samples collected in the field using standard methods.			
Grading method (maximal number of points 100)			
During the semester	points	Final exam	points
practical exam	50	written exam	50