

Subject Area: Advanced Methods in Biotechnology and Biodiversity

Subject: Contemporary methods monitoring the history of contamination of the natural environment.

Level: PhD Year: **I-IV** Semester: **2**
Speciality: N/A Status: **Facultative** ECTS: **2**
Department: Ecology
Cooperating Department: -----

Form of teaching (Number of hours: Form of assessment: Exam or Credit)

Lectures:	Conversatoria	Practicals (field course)	Total
6	-	24	30

Staff: SUBJECT COORDINATOR: Bernard Palowski PhD
LECTURER: Bernard Palowski PhD

Contents:

The aim is to broaden the students knowledge on contemporary methods in historical monitoring. Students learn what are the possibilities to monitor changes of contamination of the environment with heavy metals which are occurring in time:

- mosses eg. *Chylocomium splendens*;
- tree rings eg. *Pinus sylvestris*;
- museum and herbarium material
- raised bog cores.

During a field course students become acquainted to ecology and flora of raised bog ecosystems in Nowy Targ Basin.

Methods and forms of teaching:

lectures – methods of collecting peat bog cores; basics of palynology; peat bog dating.

practicals - field course in Nowy Targ Basin near the village Piekelnik - raised bog "Puścizna Mała" and near the village Czarny Dunajec - raised bog "Baligówka". During the field course students are acquainted of raised bog ecosystem. They learn about practical ways of sampling of peat to monitoring tests.

Requirements:

General basic knowledge in biology

Literature:

- Alderton D.H., Coleman D.O., Burton M.A. 1985. Historical Monitoring. University of London.
- Jones J. M. Hao J. 1993. Ombrotrophic peat as a medium for historical monitoring of heavy metal pollution. *Environmental Geochemistry and Health*. 15 (2/3): 67-74.
- Onianwa P. C. 2001. Monitoring atmospheric metal pollution: a review of the use of mosses as indicators. *Environmental Monitoring and Assessment*. 71: 13-50.