

Subject Area : **Advanced Methods in Biotechnology and Biodiversity**

Subject: **Advanced methods in plant ecophysiological research**

Level: PhD

Year **I-IV**

Semester:**1-2**

Speciality: N/A

Status **Facultative**

ECTS: **2**

Department: **Ecology**

Cooperating Department:

Form of teaching (Number of hours: Form of assessment: Continuous assessment of practical skills. The final report.

Lectures	Conversatoria	Practicals	Total
-	-	15	15

Staff:

Subject Coordinator: Aleksandra Nadgórska-Socha PhD

Lecturers: Aleksandra Nadgórska-Socha PhD, Marta Kandziora-Ciupa PhD

Contents:

PRACTICALS:

The aim of the module is broaden the students' knowledge on the methods in plant ecophysiological research. Students learn different methods of heavy metals analyse in soil and plants with special emphasis on appropriate sample collection. Students are acquainted with the assessment methods of selected metabolites, involved in plant defense response towards heavy metals (eq. chlorophylls, anthocyanins, proline, antioxidant enzymes). Students focus on the application of above-mentioned ecophysiological parameters and the environmental indices such as pollution index, translocation factor, bioconcentration factor, enrichment factor, chemical fingerprints of their own selected plants elements estimation.

Methods and forms of teaching: laboratory practice, short computer presentations of theoretical problem,

Requirements:

General knowledge in biochemistry and ecology

Literature:

1. Aery N.C. 2010. Manual of Environmental Analysis. Taylor & Francis New York
2. Remon E., Bouchardon J-L, Guédard MLe, Bessoule J-J, Conord C. 2013. Are plants useful as accumulation indicators of metal bioavailability. Environmental Pollution 175, 1-7.
3. Ostrowska A, Gawliński S, Szczubiałka Z. 2001. Method of analysis and estimate soil and plants property, Catalogue of the Environmental Protection Institute Warsaw. (in Polish)