Study Programme: MSc / PhD in Biology
Degree level: Second / Third Cycle (Master and PhD)
Course Title: SPECIAL COURSE IN PLANT PHYSIOLOGY-HEAVY METALS AND PLANT'S PHYSIOLOGICAL RESPONSE
Professor: Slobodanka Pajević, Milan Borišev
Required/Elective Course: Elective
Number of ECTS: 7
Prerequisites:
Course Objective: The primary objective of the course is developing and understanding relationship between individual plants and the abiotic and biotic components of their environment. The course will focus on how plants function in their natural environment, how plants tolerate stress, especially heavy metal excess, what options are available to avoid stress, how plants acquire and allocate resources, and to what extent physiological characteristics enhance ecological success.
Course Outcome: Lectures will familiarize students with physiological capacities of plants in different ecological conditions: environmental pollution/heavy metal contamination and prepare students to apply concepts and tools of plant physiology to today's complex environmental research questions.
Theoretical part: Environmental pollution and plants. Mechanisms of plant's uptake and translocation of pollutants/heavy metals. Impacts of contamination on plant physiology. Phytoremediation strategies: Phytoextraction, Phytostabilization, Phytovolatilization, Phytodegradation. Case studies. Practical part: Seminar work.
Reading List: Plant Physiological Ecology. Hans Lambers, F. Stuart Chapin III, Thijas L. Pons (Editors). References in English.