

component code: 52C0100

Course title: Environmental toxicology		
Programme:		Code:
Type of course:	Course level:	Semester:
Form of classes: Lectures, tutorials	Number of hours per week/meeting: 2L, 1T	Credit points: 4
Education profile: generally academic		Course language: english
Enrolment: yes/ nø		

GUIDE TO THE SUBJECT

I. COURSE CHART

COURSE OBJECTIVES

- C.1. Providing knowledge about ecotoxicology (generally) mainly plants toxicology especially plant stress and avoidance, adaptation, defense, limitation of salt stress.
- C.2. Providing specialist knowledge about plant toxicity in relation to heavy metals and metabolism/elimination of toxicants and pathogens in relation to environment
- C.3. Learning techniques about toxicity tests, how to choose and use them, also interpret obtained results.

PRELIMINARY COURSE REQUIREMENTS FOR KNOWLEDGE, SKILLS AND OTHER COMPETENCES

- 3. Knowledge from chemistry
- 4. Knowledge from biology
- 5. Knowledge from plant physiology

LEARNING OUTCOMES

- EK 1 -** Know the knowledge about ecotoxicology (generally) mainly plants toxicology especially plant stress and avoidance, adaptation, defense, limitation of salt stress
- EK 2 -** Has the specialist knowledge about plant toxicity in relation to heavy metals and metabolism/elimination of toxicants and pathogens in relation to environment
- EK 3 -** Can use techniques toxicity tests, how to choose and use them, also interpret obtained results.

COURSE CONTENT

Form of classes - lectures	Hours
Environmental toxicology - introduction	2
Methods used in biological quality control of the environment	6

Toxicological assessment of water and air quality	6
Toxicological assessment of soil quality, bottom sediments	6
Heavy metals ecotoxicology - occurrence, mechanism of toxic action, defense of plants against heavy metals	4
Heavy metals ecotoxicology - evolutionary aspects of heavy metal	4
Soil microorganisms, mycorrhizal symbioses in metalliferous areas	2
Form of classes - tutorials	Hours
Introduction to the tutorials and rules e.t.c	1
Commercial sets of toxicity tests - characteristics and working principle	2
Bacterial toxicity tests	2
Toxicity screening using eukaryotic cells (plant based).	2
Cytogenetic tests	2
Carcinogenic tests	1
Test	1
Biomonitoring of atmospheric air and water pollution	1
Biomonitoring of soil pollution	1
Biomarkers in the assessment of environmental pollution	1
Test	1