

Course Unit Descriptor

Study Programme: Soil, plant and genetics
Course Unit Title: Climate change adaptation in plant production
Course Unit Code: 19.ZB9010
Name of Lecturer(s): prof. dr Jovan Crnobarac, Prof. dr Branko Čupina, Ass. Prof. Mirjana Ljubojević, PhD
Type and Level of Studies: Master Academic Studies
Course Status (compulsory/elective): elective
Semester (winter/summer): winter
Language of instruction: English
Mode of course unit delivery (face-to-face/distance learning): face-to-face
Number of ECTS Allocated: 5
Prerequisites:
<p>Course Aims:</p> <p>The aim of the course is for students to become familiar with the biological properties of the main arable, legume plants and perennial horticultural crops, their specific requirements according to climatic factors, i.e. plant phenology and critical periods in relation to increasingly frequent extreme weather conditions. By adjusting agrotechnical measures, abiotic stress is reduced and adaptation to climate change is carried out, with the aim of achieving more stable yields.</p>
<p>Learning Outcomes:</p> <p>Knowing the growth and development of arable and legume plants as well as horticultural perennial crops, and changes in the dynamics of crop-planting phenology, students will be able to independently make decisions about adaptation measures to climate change in plant production.</p>
<p>Syllabus:</p> <p><i>Theory</i></p> <p>Introduction to basic arable and legume plant species and horticultural perennial crops. Requirements of certain plant species for agroecological factors, crop phenology, critical periods of greatest sensitivity of crops and plantings to unfavorable weather conditions. Application of agrotechnical measures in order to adapt to climate change. Cultivation of adaptive perennial species, as well as the introduction of new species in the crop rotation, changes in the sowing structure, adaptation of the basic tillage system in order to conserve soil moisture, rational fertilizing with organic and mineral fertilizers, proper selection of varieties/hybrids and changes in the time and density of sowing, as well as other measures enable crop adaptation to a greater or lesser extent.</p> <p><i>Practice</i></p> <p>Practical teaching will include exercises from the subject (with an emphasis on phenology and the study of the most important morphological characteristics) and plant indicators on which changes in agroecological conditions (drought and heat stress, overwetting of crops, etc.) have the greatest impact on crop sensitivity, its stability and reduction yield.</p>
<p>Required Reading: 1. Fritsche-Neto, R. and Borém, A. 2012. Plant Breeding for Biotic Stress Resistance. Springer Science & Business Media. p. 168. 978-3-642-33087-2</p> <p>2. Clark, J.A. 2007: Managing Cover Crops Profitably, 3rd edition. Sustainable Agriculture Network, Beltsville, MD, 244.</p> <p>3. Spasojević, B., Stanačev, S., Starčević, Lj., Marinković, B.: Special arable farming I (Introduction, grains and grain legumes), II amended and supplemented edition. Institute for Agriculture and Vegetables, Novi Sad, 1984 (electronic version 2011), p. 1-302.</p>

4. Jevtić, S, 1992.: Special farming. Nauka, Belgrade, p. 1-605.

Weekly Contact Hours:

Lectures:3

Practical work:2

Teaching Methods: Theoretical teaching and practical exercises in production conditions, preparation of seminar papers and discussion on the topic of the written seminar paper. Oral presentation and discussion with candidates, visual demonstrations (video projector), presentations.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation	5	written exam	32
Practical work	5	oral exam	25
Preliminary exam(s)	20	
Seminar(s)	10		