

Study Programme: JOINT MASTER ACADEMIC STUDIES
Sustainable Agriculture, Food Production and Food Technology in the Danube Region
Course Unit Title: WATER RESOURCES MANAGEMENT FOR SUSTAINABLE AGRICULTURE
Course Unit Code:
Name of Lecturer(s): Bojan Srđević, Zorica Srđević
Type and Level of Studies: Master studies
Course Status (compulsory/elective): compulsory
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: 6
Prerequisites: None
<p>Course Aims:</p> <p>The topic will give an understanding and an introduction to water management for agriculture, as well as to instruments in water resources planning and management.</p>
<p>Learning Outcomes:</p> <p>On successful completion of this subject, the students should:</p> <ul style="list-style-type: none"> a) have acquired understanding of concept and importance of water resources planning and management with focus on agricultural water needs; b) have acquired basic knowledge of a number of methods and tools in water management; c) be able to identify suitable methods and tools for solving water allocation problems; d) be able to critically assess research results; e) improve skills for independent learning, reporting and presentation; f) improve IT skills.
<p>Syllabus:</p> <p><i>Theory</i></p> <p>Introduction. Concepts and methods of integrated planning and control of water and related resources. Water quantity and quality (combat for water, availability, scarcity; agricultural water needs). Irrigation and drainage systems. Identifying and assessing water demands and water availability for multiple purposes. Modeling of water resources (surface water, ground water, integrated waters). Systems analysis and optimization approaches and methods. Socioeconomic aspects in water management. Participative decision-making frameworks. Water users associations. Farmers and their role in water management. Traditional and modern long-term performance measures for water systems (robustness, reliability, risk, resiliency and vulnerability).</p> <p><i>Practice</i></p> <p>Examples of: Concepts and methods of integrated planning and control of water and related resources. Water quantity and quality (combat for water, availability, scarcity; agricultural water needs); Traditional and modern long-term performance measures for water systems (robustness, reliability, risk, resiliency and vulnerability); Participative decision-making frameworks.</p>
<p>Required Reading:</p> <p>Srđjevic Z., Srđjevic B.: An extension of the sustainability index definition in water resources planning and management.</p>

Water Resources Management 31 (5): 1695-1712, 2017.

Srđević B. Systems Analysis Methods in Engineering With Extensions in Environmental Engineering, Federal University of Bahia, Salvador, Brazil. (Lecturing Notes), 2003.

Simonović S. Managing Water Resources. Methods and Tools for a Systems Approach, UNESCO Publishing, 2009.

Weekly Contact Hours:

Lectures:

Practical work:

Teaching Methods:

Lectures, problem sheets, tutorials; Forms of assessment: Examination, Assignments.

Course materials: Textbooks; Materials will be given at the beginning of each section; Material available on web

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation		written exam	40
Practical work		oral exam	
Preliminary exam(s)		
Seminar(s)	60		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.