



UNIVERSITÀ  
DEGLI STUDI DELLA  
TUSCIA



DIPARTIMENTO DI SCIENZE AGRARIE E FORESTALI



Ca' Foscari  
University  
of Venice

Department of Asian  
and North African Studies



ITALY-CENTRAL ASIA  
KNOWLEDGE NETWORKS

Short Course in

# Water Resource Management and Irrigation Innovations

**September 29<sup>th</sup>, 2025 – October 3<sup>rd</sup>, 2025**  
**DAFNE Department, Tuscia University, Viterbo, Italy**

## OVERVIEW

Organized by the University of Tuscia, Department of Agriculture and Forest Sciences, from September 29th to October 3rd, 2025, this intensive course offers a comprehensive overview of technologies and strategies for sustainable water management in agriculture. Through seminars and visits to leading agricultural and industrial sites, participants will deepen their knowledge of innovative irrigation techniques, water stress management, and precision agriculture solutions. The course adopts an interdisciplinary approach that integrates agronomy, hydrology, and engineering.

The course is open to a maximum of 25 participants from Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan) and is supported by Ca' Foscari University of Venice, Department of Asian and North African Studies, under the umbrella of the Italy-Central Asia Knowledge Networks.

## PROGRAM

### Day 1 - Monday, September 29<sup>th</sup>

#### **Morning (09:30-10:00)**

Participant registration and course inauguration.

#### **Morning (10:00-12:00)**

Seminar on sustainable water resource management and irrigation. The seminar on sustainable water resource management will focus on crucial topics for modern agriculture, which faces increasing environmental and climatic challenges. Advanced water management techniques, such as drip irrigation, will be presented, comparing traditional irrigation methods with innovative solutions. The integrated approach between agronomy and hydrology will be central, aiming to optimize water resource use.

#### **Afternoon (14:00-16:00)**

Guided tour of the University's Didactic-Experimental Agricultural Farm. Participants will visit the University of Tuscia's Agricultural Farm, with a particular focus on water resource management strategies applied in the field. Various irrigation systems in operation, such as automatic drip irrigation, and precision technologies that optimize water use will be observed.

### Day 2 – Tuesday, September 30<sup>th</sup>, 2025

#### **Morning & Afternoon (09:00-16:00)**

Visit to TORO Irrigation, Fiano Romano (Rome). Tour of irrigation system production plants and assembly lines. Focus on innovative irrigation materials and advanced sensor technologies. Workshop on irrigation management software and remote monitoring solutions. Introduction to H2OCAD irrigation design software (free access provided).

### Day 3 – Wednesday, October 1<sup>st</sup>, 2025

#### **Morning & Afternoon (09:00-16:00)**

Visit to ARSIAL (Agricultural Research Center, Tarquinia). Exploration of new irrigation methods and IoT for soil and water monitoring. Discussion on drought-resistant crops, precision irrigation, and climate change adaptation strategies.

### Day 4 – Thursday, October 2<sup>nd</sup>, 2025

#### **Morning & Afternoon (09:00-16:00)**

Visit to Maccarese SpA Agricultural Company (Fiumicino, Rome). Focus on digital and precision agriculture tools for water management. Observation of advanced farming techniques, including high-density almond plantations, pest control systems, and biogas plants. Insights into precision agriculture and livestock farming technologies.

### Day 5 – Friday, October 3<sup>rd</sup>, 2025

#### **Morning (10:00-12:00)**

Seminar on greenhouse trials conducted by the horticulture research group on water stress management. Experimental protocols will be described, and a demonstration will be conducted on the use of a high-throughput phenotyping platform (spin off Arcadia, University of Tuscia) for stress monitoring. Morphological data and spectral indices resulting from plant phenotyping will be discussed. A seminar on water stress mitigation strategies in modern horticulture will follow, including case studies.

#### **Morning (12:00-12:30)**

Closing of the Course.

## Instructors

Andrea Petroselli, Ciro Apollonio, Raffaele Casa, Mariateresa Cardarelli  
DAFNE Department, Tuscia University

## Short Course webpage:

<https://www.unitus.it/magazine/news/summer-school-dafne-short-course-wrmii-september-29th-to-october-3rd-2025/>

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