



**SOCIETÀ DI ORTOFLOFRUTTICOLTURA ITALIANA  
FIRENZE**

**SEMINARI DI ALTA FORMAZIONE SCIENTIFICA**

**TRENDS IN MEASUREMENTS AND ESTIMATION OF CROP WATER  
REQUIREMENTS**

***Dr. Gianfranco Rana***

*C.R.A. ISTITUTO SPERIMENTALE AGRONOMO BARI, ITALY*

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*ATMOSPHERIC SCIENCE DIVISION DEPT. OF LAND AIR AND WATER RESOURCES  
UNIVERSITY OF CALIFORNIA, DAVIS*

***Dr. Pasquale Steduto***

*CHIEF WATER DEVELOPMENT AND MANAGEMENT UNIT FAO, ROME*

*CATANIA (ITALY), 5-9 OCTOBER 2009*

***in cooperation with:***



**DIA**  
*Università degli Studi di Catania*



**Società Italiana  
di Agronomia**



**DOFATA**  
*Università degli Studi di Catania*



**CNR IBIMET Bologna**

***sponsored by:***



**Facoltà di Agraria, Università  
degli Studi di Catania**



**Regione Siciliana Assessorato  
Agricoltura e Foreste**



**GRU.S.I.**  
**Gruppo Studi Irrigazione**

**CSEI Catania**

**Centro Studi di Economia  
applicata all'Ingegneria**

**APPLICATION DEADLINE IS 15 JULY 2009**

**FOR INFORMATION AND ON LINE APPLICATION PLEASE CONTACT:**

**SOI (SOCIETÀ DI ORTOFLOFRUTTICOLTURA ITALIANA)**

**POLO SCIENTIFICO E TECNOLOGICO DELL'UNIVERSITÀ DI FIRENZE**

**VIALE DELLE IDEE 30 - 50019 FIRENZE**

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**TRENDS IN MEASUREMENTS AND ESTIMATION OF CROP WATER  
REQUIREMENTS  
CATANIA (ITALY), 5-9 OCTOBER 2009**

The course is organised by SOI (Società di Ortoflorofrutticoltura Italiana) in cooperation with SIA (Società Italiana di Agronomia), the Dipartimento di Ingegneria Agraria and the Dipartimento di OrtoFloroArboricoltura e Tecnologie Agroalimentari of the University of Catania, and CNR-IBIMET (Istituto di Biometeorologia sez. di Bologna).

The Course is strictly dedicated to PhD. students, postdoc scientists, researchers and professors with a sound background in crop water requirements, their response to water and associated modelling development. The course will give an advanced knowledge and training on basic themes as well as research results related to water resources and hydro-environmental management in arid, semi-arid and humid tropical environments.  
English will be the official language.

Student selection will be made by the Organizers on the basis of the C.V. which has to be submitted together with the application form (available at SOI website <http://www.soih.it/altaformazione>).

The Course will include 30 hours of lectures distributed over 5 days. Lectures will be given by Dr. Gianfranco Rana (C.R.A. Istituto Sperimentale Agronomico of Bari), Dr. Richard L. Snyder (University of California, Davis) and Dr. Pasquale Steduto (FAO, Rome). The course arguments will be introduced with seminars given by Prof. A. Motisi (University of Palermo) C. Xiloyannis (University of Basilicata) and S. De Pascale (University of Naples Federico II). On Saturday 10<sup>th</sup> October, a field day will be organized at an experimental orchard where micrometeorological systems are installed to measure mass and energy exchanges at the soil-plant-atmosphere continuum.

Participants will receive a certificate signed by SOI and the lecturers, as well as the Organizers.

Registration fees are 600 € and include 30 hr of lectures at the University of Catania, books, working material and working lunches. Non-resident students will be hosted in a \*\*\* Hotel in double rooms (optional single-room rates are available upon request).

SOI Members benefit of a 10% reduction in registration fees.

The Course will be given at the lecture-rooms facilities of the University of Catania, located in Via S. Sofia, 100.

Course Directors are: **Simona Consoli**, University of Catania, **Paolo Inglese**, University of Palermo, and **PierPaolo Roggero**, University of Sassari.

Local Organizing Committee: **Simona Consoli** (University of Catania; [simona.consoli@unict.it](mailto:simona.consoli@unict.it)), **Alberto Continella** (University of Catania; [acontine@unict.it](mailto:acontine@unict.it)) and **Stefano La Malfa** (University of Catania, SOI National Council; [slamalfa@unict.it](mailto:slamalfa@unict.it)).



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*CATANIA (ITALY), 5-9 OCTOBER 2009*

***Trends In Measurement And Estimation Of Crop Water Requirements***

<b>TIMETABLE</b>	<b>9.00 – 11.00</b>	<b>11.30 - 13.30</b>	<b>15.00 – 17.00</b>
<b>MONDAY</b>	<b>A. Motisi</b> Course introduction Methodologies and applications to measure and estimate mass and energy exchanges at the soil-plant-atmosphere continuum	<b>C. Xiloyannis</b> Plant response to water deficit: The case of fruit tree crops: water savings and stress resistance	<b>G. Rana</b> Measurement and estimation of crop actual evapotranspiration ET” Measurement of ET - Plot scale - Plant scal
	<b>R. L. Snyder</b> Introduction to Energy Balance Measurements Net Radiation Soil Heat Flux Density Sensible Heat Flux Density Latent Heat Flux Density	<b>P. Steduto</b> The FAO AquaCrop model to simulate yield response to water” Modeling in brief: what, how and why The growth engines of Crop-Models - Carbon driven - Solar driven - Water driven	<b>G. Rana</b> Estimation of ET The theoretical analysis and the physical laws of evaporation. The resistance approach and factors influencing the canopy resistance
<b>WEDNESDAY</b>	<b>P. Steduto</b> The FAO AquaCrop Model Background Model components - Climate - Soil - Crop - Management	<b>S. De Pascale</b> Plant response to water deficit: The case of vegetable crops: water savings and stress resistance	<b>G. Rana</b> Estimation of ET Models of canopy resistance
	<b>P. Steduto</b> The FAO AquaCrop Model Calibration of main crops Validation results Application examples Improving water use efficiency and crop water productivity	<b>G. Rana</b> Estimation of ET Indirect approach to estimate ET ET under Mediterranean climate	<b>R. L. Snyder</b> Energy Balance Surface Renewal theory Applications Reference Evapotranspiration Spatial variation Microclimates
<b>FRIDAY</b>	<b>R. L. Snyder</b> Crop Coefficients – Single K <sub>c</sub> Method Bare soil Crop Coefficients Field and Row Crops Deciduous Trees and Vines Mature Crops Immature Crops Subtropical Orchards	<b>Case studies presentations</b> Students will be directly involved through the presentation of their research activities on the course main topics. We hope for an open discussion between students and the course lecturers.	<b>R. L. Snyder</b> Agricultural ET and Irrigation Scheduling Basic Irrigation Scheduling Water Stress Salinity Stress Yield Prediction