

REGISTRATION

Costs: Early bird rate for payments before **15 July 2011** is 300 € for the 3 days course + 100 € for the additional day of field exercise (optional).

On site registration is 400 €+100 € for the additional day.

A 100 € discount is applied to members of IAHR and of SII-Società Idrologica Italiana.

For PhD and Master students the 300 € early bird or the 400 € on-site registration fee includes the field exercise.

The cost includes, in addition to the printed and digital material on the course also a printed and a CD version of the 2010 edition of the WMO Manual on Stream gauging.

Please fill this form and send via e.mail to ranzi@ing.unibs.it or to the fax number +39+0303711312 to the attention of Roberto Ranzi, Chairman of the Local Organising Committee.

I am interested in attending the Course on Stream Gauging and ask to be contacted to provide registration and payment details.

Given Name:.....
Family Name:.....
Affiliation :.....
IAHR or SII Member: ..YES.....NO.....
IAHR Membership number:.....
PhD or Master student: ..YES.....NO.....
Address :.....
Postal Code and city.....
e.mail.....
telephone.....
fax.....

SCIENTIFIC COMMITTEE

The course is organised by the IAHR Working Group on Applied Hydrology and the Committee on Experimental Methods and Instrumentation, by WMO, and the University of Brescia.

Members of the Scientific Committee

Prof. Baldassare Bacchi, University of Brescia, I

Prof. James Ball, University of Technology Sydney, Australia

Eng. Claudio Caponi, WMO, Geneva, CH

Prof. Boosik Kang, Dankook University, Korea

Eng. Giuseppina Monacelli, ISPRA - Institute for Environmental Protection & Research, I

Prof. Marian Muste, University of Iowa, USA

Prof. Roberto Ranzi, University of Brescia, I

LOCAL ORGANISING COMMITTEE

B. Bacchi, S. Barontini, G. Grossi, M. Pilotti, R. Ranzi, M. Tomirotti (University of Brescia) and G. Monacelli (ISPRA, Rome)

PATRONAGE AND SPONSORS



Società Idrologica Italiana-
Italian Hydrological Society



"Giulio De Marchi"
Scientific Association



Associazione Idrotecnica Italiana-
Italian Hydrotechnical Association



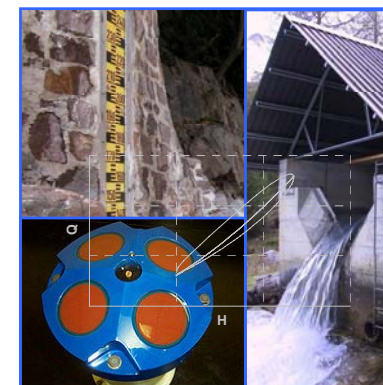
University of
Brescia



WMO OMM

1st IAHR-WMO Short course on Stream gauging

First Call



**Primo corso di aggiornamento
IAHR/WMO su:
Idrometria dei corsi d'acqua**

Primo annuncio

University of Brescia, Italy

6-9 September 2011

WHY A COURSE ON STREAM GAUGING?

Motivation: the Hydrology Commission of World Meteorological Organisation (WMO) and the International Association for Hydro-Environment Engineering and Research (IAHR) have agreed to cooperate in the design and organisation of a course on stream gauging based on the 2nd edition of the Manual of Stream Gauging (WMO N° 1044, 2010), and recent advancements in research, technology and instrumentation for hydrometry. Stream gauging is critical for routine monitoring of catchment and estuarine environments and for the provision of essential information for hydrological and hydraulic modelling of these environments. It is recognised that continued education and training on methods for hydrometric data collection, validation and publication are the backbone for the consolidation and dissemination of a 'hydrological culture'. Such a culture was and is becoming increasingly important at a time when water resources are stressed by climate and anthropogenic impacts. The new challenges calls for improved instruments and methodologies to support integrated river basin management (especially for trans-boundary watersheds) and analyses of future alternative scenarios.

Objective: is to provide a primer to the new edition of the WMO Manual of Stream Gauging, published in 2010, by describing both standard methods and recent technological advancements in stream gauging (with special emphasis on hydroacoustic instruments).

Target: managers, professionals and technicians of hydrological and hydro-meteorological services, water engineers, staff of public water authorities, private water services, hydropower companies, Master and PhD Students. This course is the first of a series that will be organized worldwide by IAHR and WMO. A version of the course specifically designed and dedicated to operational staff of National Meteorological and Hydrological Services is also foreseen.

COURSE PROGRAMME

The course trainers are university professors and researchers, experts on hydrometry and instrumentation manufacturers. The programme includes 3 days of classroom lectures and hands-on exercises. An optional one day field trip demonstrating in-situ measurements with a current meter and an Acoustic Doppler Profiler it is also included in the course. The workshop main language is Italian, with lectures of the international experts provided in English. Training material will be mainly the WMO Manual on Stream gauging,

1st day: 6 September 2011

Review of open channel hydraulic principles
Selection of gauging station sites
Overview of discharge "estimation"
Measurement of stage and velocity
Overview of velocity-area methods

2nd day: 7 September 2011

Measurement of discharge by conventional current meter methods
Measurement of discharge by acoustic methods: Acoustic Doppler Velocimeter (ADV), Acoustic Doppler Current Profilers (ADCP), ultrasonic measurements.
Overview of index-velocity methods. Classroom exercises

3rd day: 8 September 2011

Measurement of discharge by precalibrated measuring structures.
Measurement of discharge by miscellaneous methods
Uncertainty of discharge measurements
Processing of hydrometric data.
Classroom exercises

4th day: 9 September 2011

Field work.
Discharge measurement with a current meter
Discharge measurement with an Acoustic Doppler Current Profiler.
Computer exercises.

VENUE

The course is organised at the University of Brescia, in the Department of Civil Engineering, Architecture, Land and Environment (DICATA).
Address: Brescia, Via Branze, 43

HOW TO REACH BRESCIA:

By train: Brescia is on the Turin-Milan-Venice railway line. Train timetable: www.trenitalia.it. The University can be reached **by bus** from the Brescia railway station with the bus n. 1 and 10. Stop in Via Branze.

<http://dicata.ing.unibs.it/waterengineering>

By plane: The closest airports for domestic and international flights are Verona, Orio al Serio (Bergamo), Milan Linate and Milan Malpensa.

By car: Exit the Milan-Venice highway through "Brescia Ovest" station. Then take direction north to "Vatrompia" or "Ospedale".

