

SEISMOLOGY@SCHOOL

COURSE PROGRAMME

Department of Physics, University of Naples Federico II
Naples, 4-8 June 2012

Monday – June 4, 2012

9.00 Registration

9.30 Welcome and introduction

Aldo Zollo, Department of Physics, University of Naples, Italy

Session 1 - Introduction to seismology

10.00 Earthquakes and waves

Aldo Zollo, Department of Physics, University of Naples, Italy

11.00 *Coffee Break*

11.30 Seismology@school:

The European experience

Paul Denton, British Geological Survey, United Kingdom

12.30 Earthquake early-warning at schools in the REAKT Project

Antonio Emolo, Department of Physics, University of Naples, Italy

13.00 *Lunch break*

15.00 Guided tour

Visit to Science Museum “Città della Scienza”

Tuesday – June 5, 2012

Session 2- Observation and measurements in seismology

10.00 How Earthquakes occur?

Anne Sauron, Institute of Geophysics, ETH, Switzerland

11.00 *Coffee break*

11.30 Monitoring seismicity: the observatory practise

Antonella Bobbio, INGV, Naples, Italy

12.30 *Lunch break*

Session 2.1 – Practicals and feedback discussion

15.00 Seismic instruments: from “homemade” sensors to professional systems

Paul Denton, British Geological Survey, United Kingdom

16.30 *Coffee break*

Wednesday – June 6, 2012

Session 3 - Seismic signal processing and data analysis

10.00 Locating the earthquakes: the theory behind is much but not all
Stefano Solarino, INGV, Italy

11.00 *Coffee break*

11.30 Signal processing tools for schools/
Seismological analysis and visualization tools for schools.
Anthony Lomax, ALomax Scientific, France

13.00 *Lunch break*

Session 3.1 – Practicals and feedback discussion

15.00 Seismic signal processing
Paul Denton, British Geological Survey, United Kingdom

16.30 *Coffee break*

20.00 *Social Dinner*

Thursday – June 7, 2012

Session 4 - Data modelling and interpretation

10.00 Forward modelling
Ernestina Lucca, AMRA s.c.ar.l., Italy

11.00 *Coffee break*

11.30 Introduction to inverse problems
Antonio Emolo, Department of Physics, University of Naples, Italy

12.30 *Lunch break*

Session 4.1 – Practicals and feedback discussion

15.00 Using data, modelling
Jean-Luc Berenguer, Centre International de Valbonne, Valbonne, France

16.30 *Coffee break*

Friday – June 8, 2012

Session 5 - Guided tour into volcanoes

9.30 Guided tour into volcanoes: Campi Flegrei and Solfatara

13.30 *Lunch break*

Session 5.1 – Course closure

15.30 Evaluation session and closure
Aldo Zollo, Jean-Luc Berenguer, Paul Denton

Additional Information

Training activity

Structured training course

Thematic fields of training activity

Physics : sensors, waves, data logging, signal analysis

Earth Science: seismology, tectonics

Science and Society: seismic and volcanic risks

Duration of the training activity

Full five working days (excluding travel time)

Language of training activity and materials will be provided

English

Target audience

Science teachers (secondary), teacher trainers, headteachers/principals/managers of schools/organizations offering education from EU Member States and/or Associated Countries

Institution organizing the training

Department of Physics, University of Naples Federico II

Via Cintia – Complesso Universitario di Monte S. Angelo

Napoli, Italia

<http://www.fisica.unina.it>; <http://www.rissclab.unina.it>

Organizer/s the training

UNINA – Università di Napoli Federico II (Italy)

INGV – Istituto Nazionale di Geofisica e Vulcanologia, (Italy)

CNRS – Centre national de la recherche scientifique (France)

BGS – British Geological Survey (United Kingdom)

ETH - Eidgenössische Technische Hochschule (Switzerland)

Venue

Department of Physics – University of Naples Federico II (Italy)

Via Cintia – Complesso Universitario di Monte S. Angelo

Napoli, Italia

Full description of training contents

Preparation

This course is addressed to secondary school teachers who are currently teaching science or geosciences or are planning to do in the future. Participants have to fill a detailed questionnaire in before the course beginning to indicate their level of experience and training and their expectations from the course.

Participants are invited to prepare a short presentation on the teaching of physics or geosciences in their school/country.

Objectives

- To provide through scientific lectures and practicals new inspirations and teaching ideas for their science classes
- To introduce techniques and tools for data acquisition
- To encourage participants to create their own materials
- To provide an opportunity for participants to meet and exchange experiences with teachers from different countries and to consider the setting up of educational projects and inter-school links
- To increase the awareness on earthquake hazards

Methodology

- Lectures and discussion on the teaching of seismology in secondary schools
- Introduction to practical activities that can help the teaching of earth science in schools
- Day visit to natural observatories such as Campi Flegrei and Solfatara
- Group discussion on exchange of experiences through the European teacher's community

Pre-departure programme

Suggested websites:

<http://www.rissclab.unina.it>

<http://www.bgs.ac.uk/ssp>

<http://www.iris.edu>

<http://www.edusismo.org>

<http://www.seismoatschool.ethz.ch/>

<http://www.sismoscholar.it>

Type of certification of attendance awarded

Certificate of participation stating course title, location, dates, summary of content, number of hours (*delivered before participants' departure*)

Follow-up activities

- Distance learning activities
- Email contacts with trainers

It is hoped that participants:

- keep in touch each other and keep developing contacts with other participants of the course.
- create and adapt materials to use them in their classrooms.

Information on course session/s

Date of start: June 4, 2012

Time of start: 10.00 am

Date of end: June 8, 2012

Time of end: 18.00 pm

Host institution: Department of Physics, University of Naples Federico

Street and number: Via Cintia – Complesso Universitario di Monte S. Angelo

Town/ City: Napoli

Country: Italia

Contact person for the course session

Name and title: Prof. Aldo Zollo

Tel nr: +39081676810

Fax nr: +39081679920

Email: aldo.zollo@unina.it

Identification of the trainer/s

Name: *Aldo Zollo*

Professional qualification: Professor (University of Naples, Italy)

Role during the training: Trainer

Name: *Jean-Luc Berenguer*

Professional qualification: Science Teacher (CNRS, France)

Role during the training: Trainer

Name: *Antonella Bobbio*

Professional qualification: Technician (INGV, Italy)

Role during the training: Trainer

Name: *Paul Denton*

Professional qualification: Researcher (BGS, United Kingdom)

Role during the training: Trainer

Name: *Antonio Emolo*

Professional qualification: Assistant Professor (University of Naples, Italy)

Role during the training: Trainer

Name: *Anthony Lomax*

Professional qualification: Scientific Consultant (Alomax, France)

Role during the training: Trainer

Name: *Ernestina Lucca*

Professional qualification: PostDoc Fellow (AMRA, Italy)

Role during the training: Trainer

Name: *Stefano Solarino*

Professional qualification: Researcher (INGV, Italy)

Role during the training: Trainer

Name: *Anne Souron*

Professional qualification: Researcher (ETH, Switzerland)

Role during the training: Trainer

Maximum number of participants envisaged

60

Participation costs

- Course Fee (in euro): 750 (*for the whole course*)
- No pre-registration fee
- Payment is due 2 months before the course starts
(*For participants requesting Comenius grant no payment is due until funding has been approved*)

Cancellation rules

There are no cancellation fee

Cancellation of the training event

If the training event will be cancelled, the participant will not be charged with any costs and any course fee paid by participants will be reimbursed.

Provision for special needs (*disabled, dietary, religious, ethnic,...*)

Every reasonable effort will be made to accommodate special needs if required.

Information about course and payment

<http://www.rissclab.unina.it>

info@rissclab.unina.it

Comenius individual mobility In-service training for teachers and other educational staff

The Comenius programme (part of the Lifelong Learning Programme) focuses on the first phase of education, from pre-school and primary to secondary schools.

In the framework of the Comenius Programme, **Grants are available** to enable teachers and other categories of staff working in school education to take part in in-service training activities. It is relevant for all members of the education community: pupils, teachers, public authorities, parents' associations, non-government organisations, teacher training institutes, universities and all other educational staff.

Information about Comenius Grants

http://ec.europa.eu/education/comenius/doc996_en.htm

Comenius National Agencies

http://ec.europa.eu/education/lifelong-learning-programme/doc1208_en.htm