



AP/CAT (2009) 6  
English

**EUROPEAN UNIVERSITY CENTRE FOR CULTURAL HERITAGE**  
**EUROPEAN AND MEDITERRANEAN MAJOR HAZARDS AGREEMENT**  
**(EUR-OPA)**

**European Master-Doctorate Course on**

**VULNERABILITY OF CULTURAL HERITAGE**  
**TO CLIMATE CHANGE**

*European Youth Centre, Council of Europe, Strasbourg*

*7-11 September 2009*

**Final Programme**

Our urban landscape and built heritage are designed in line with the local climate specificities. As our cultural heritage as a whole is exposed to the atmosphere over long periods of time and therefore exposed to attack from pollutants and natural weathering processes, climate change is thus expected to have either catastrophic or subtle effects on Cultural Heritage materials and Cultural Landscapes.

The *main objective of the 2009 Strasbourg Course* is to ensure that young European students are informed on these important issues and will be able to undertake future rigorous scientific monitoring of changes in relation with cultural heritage.

The *Programme of the Course* will cover the following topics:

- *Past Climate Changes* and their impact on Cultural Heritage
- *Heritage Climatology*
- Principles of *Adaptation and Resilience* of Cultural Heritage to Climate Change
- Impact of Climate Change on *building structures*
- *Dose-Response and Damage Functions* for materials in a Changing Climate
- Modelling *sea salts* transport and deposition
- Modelling *wetting and drying* of historic buildings
- Impact of Climate Change on *building materials: stone, mortar, modern glass, stained glass windows*
- Impact of Climate Change on *organic materials*
- *Biological impact* of Climate Change on Cultural Heritage
- *Cultural landscapes* and climate change
- *Sea level rise* models and possible application to Cultural Heritage
- *Impact of Climate Change in Indoor Environment*
- The policies and action plans of *International Organisations* (Council of Europe, UNESCO, ICCROM)

The Course is addressed to young people with scientific background from Europe or from member-countries of the EUR-OPA Agreement (a high level of scientific background is required in order to facilitate the comprehension of the topics): physicists, chemists, geologists, biologists, engineers. Teaching will be delivered in English without any simultaneous interpretation. The lecturers belong to European Universities, National Research Centres and International Organisations.

There is no registration fee. The Council of Europe will cover the travel and subsistence expenses for a limited number of participants after careful examination and selection of the applications.

**On request, students may benefit of 3 ECTS (European Credit Transfer System) after agreement with their own university.**



**The course will be held on the premises of the European Youth Centre in Strasbourg, France, from 7 to 11 September 2009. The registration form is attached to this Programme.**

**The course is addressed to European countries or member-countries of the EUR-OPA Agreement.**

**Deadline for application: 15 June 2009.**

Information and application forms:

- European University Centre for Cultural Heritage, Villa Rufolo, I-84010-Ravello, Italy, <http://www.univeur.org> [univeur@univeur.org](mailto:univeur@univeur.org)
- or Council of Europe, EUR-OPA, DG IV, F-67075-Strasbourg Cedex, <http://www.coe.int/europarisks> [europa.risk@coe.int](mailto:europa.risk@coe.int)

# FINAL PROGRAMME

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## Sunday 6 September 2009

Arrival of the participants and registration.

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## Monday 7 September 2009

9:00-10:00

### Introduction to the course

- *Eladio Fernandez-Galiano, Council of Europe*
- *Eugenia Apicella, CUEBC, Ravello*
- *Roger-Alexandre LEFEVRE, University Paris XII*

10:00-10:30

*Coffee break*

10:30-12:00

### The Noah's Ark Project: "Global Climate Change Impact on Built Heritage and Cultural Landscapes"

- *Cristina Sabbioni, CNR-ISAC, Bologna*

12:00-14:00

*Lunch*

14:00-15.30

### Heritage Climatology

- *Peter Brimblecombe, School of Environmental Sciences, Norwich*

15.30-15.45

*Coffee Break*

15.45-17.00

### Dose-Response and Damage Functions for Materials in a Changing Climate

- *J. Tidblad, Swedish Corrosion Institute*

17.00-18.00

### Dose-Response Function for the soiling of modern glass in a changing climate

- *Anda Ionescu, University Paris XII*
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## Tuesday 8 September 2009

9:00-10:30

### Impact of Climate Change on building materials: stone, mortars

- *Cristina Sabbioni, CNR-ISAC, Bologna*

10:30-10:45

*Coffee break*

10:45-12:15

### Impact of Climate Change on clay and organic materials

- *Roman Kozlowski, Institute of Catalysis and Surface Chemistry ICSC, Polish Academy of Sciences*

12:15-14:00

*Lunch*

14:00-15.30

### Impact of Climate Change on mediaeval stained glass

- *Manfred Schreiner, ISTA, Vienna*

15.30-15.45

*Coffee Break*

15.45-17.15

### The Climate Change at the European and Global scale over the last Millennium: methodologies and results

- *Dario Camuffo, CNR-ISAC Padua*



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### Wednesday 9 September 2009

- 9:00-10:30 **Modelling sea salts transport and deposition**  
▪ *Terje Grontoft, Norwegian Institute for Air Research (NILU), Oslo*
- 10:30-10:45 *Coffee break*
- 10:45-12:15 **Impact of Climate Change on building structures**  
▪ *Milos Drdacky, Institute of Theoretical and Applied Mechanics (ITAM)*
- 12:15-14:00 *Lunch*
- 14:00-17:00 **Workshop Session / Discussion**



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### Thursday 10 September 2009

- 9:00-10:30 **Modelling wetting and drying of historic buildings**  
▪ *May Cassar, Centre for Sustainable Heritage, London*
- 10:30-10:45 *Coffee break*
- 10:45-12:15 **Principles of adaptation and resilience of Cultural Heritage to Climate Change**  
▪ *May Cassar, Centre for Sustainable Heritage, London*
- 12:15-14:00 *Lunch*
- 14:00-15.30 **Sea level rise models and possible application to Cultural Heritage**  
▪ *Fabio Trincardi, ISMAR-CNR (Institute for Maritime Science)*
- 15.30-15.45 *Coffee Break*
- 15.45-17.15 **Past climate changes and their impact on cultural heritage**  
▪ *Max Schvoerer, Centre de Recherche en Physique Appliquée à l'Archéologie, Université de Bordeaux III, France*



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### Friday 11 September 2009

- 9:00-10:30 **Cultural landscapes and climate change**  
▪ *Giulia Caneva, Rome 3 University*
- 10:30-10:45 *Coffee break*
- 10:45-12:15 **Biological impact of Climate Change on Cultural Heritage**  
▪ *Cesareo Saiz Jimenez, Instituto de Recursos Naturales y Agrobiología de Sevilla*
- 12:15-14:00 *Lunch*
- 14:00-15.00 **Policies and Action Plans of UNESCO**  
• *Giovanni Boccardi, World Heritage Centre, UNESCO, Paris*
- 15.00-16.00 **Policies and Action Plans of ICCROM**  
▪ *Mounir Bouchenaki, ICCROM, Rome*
- 16.00-16.15 *Coffee Break*
- 16.15-17.15 **Council of Europe strategies in the field of Climate Change and Cultural Heritage**  
▪ *Eladio Fernandez-Galiano, Council of Europe*