

Strasbourg, 29 October 2009

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**EUROPEAN AND MEDITERRANEAN MAJOR HAZARDS AGREEMENT (EUR-OPA)**

European Master Course on  
**Climate change: impact on human health and on environment**

Ecole Nationale du Génie de l'Eau et de l'Environnement de Strasbourg (ENGEES)  
30 November – 4 December 2009

## **Programme**

Organised by:

Université de Strasbourg  
Faculté de Médecine  
Ecole Nationale du Génie de l'Eau et de l'Environnement de Strasbourg (ENGEES)  
Council of Europe – EUR-OPA Major Hazards Agreement

## Key points of the programme

There is an unanimous consensus that gas emission generated by humans will change climate, recently warming by 1.4-5.8°C (prediction for 2100). The main effects will be thermal stress, extreme weather events, infectious diseases changing in their location or frequency. A more global approach has to take into account difficulties in food yields, social, demographic and economic imbalances, which could by themselves favour emerging infectious pathogens.

The aim of this course given in Strasbourg (30 Nov – 4 Dec 2009) is to develop specific knowledge on the main features of climate change, and of its health and environmental impact. Data on Earth physics modifications in case of climate change (past and future) will be reported. Basic and applied features will be presented for its impact on human health and on environment: virology, parasitology, bacteriology, risks in emergency medicine and respiratory syndromes, modifications in the oceans (wildlife, coral), environmental impact (especially water); at last, the crucial role of health authorities and governments will be highlighted.

The programme will cover the following topics:

- Physics and climate change : gas emission and risk management
- Energy threshold of climate risk and impact on health : example of Sahara for 10 000 years and limits of people to adapt
- Continental hydrology: climate and water circulation in continents, characterization of extreme events
- Hydro-ecology of humid areas : ecology, water and sediment transfer
- Plants and wildlife in oceans, reflect of climate tendencies
- Emerging viral diseases and climate change
- Bacterial diseases and enteric concern in case of climate modifications
- Malaria favoured by a large distribution of insects dispersing the infectious agents
- Emergency medicine/respiratory diseases
- Socio-economic aspects of climate change in their international context

The course is addressed to young people with high scientific background from Europe or from member-countries of the EUR-OPA Agreement: engineers, geologists, biologists, students in medicine. Lessons will be given 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 examination and selection of applications.

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

The course will be held in the *Ecole Nationale du Génie de l'Eau et de l'Environnement de Strasbourg (ENGEES)*, France, from 30 November to 4 December 2009. The registration form is attached to this Programme.

**Deadline for application: 31 October 2009**

### Information and application forms:

- Dr Evelyne Schvoerer, Institut de Virologie, 3 Rue Koeberlé, 67 000 Strasbourg, France: [evelyne.schvoerer@chru-strasbourg.fr](mailto:evelyne.schvoerer@chru-strasbourg.fr)
- or Tanya Peshovska, Council of Europe, EUR-OPA Major Hazards Agreement, DG IV, F-67075-Strasbourg Cedex: [tanya.peshovska@coe.int](mailto:tanya.peshovska@coe.int);

## DRAFT PROGRAMME

**Sunday**  
**29 November 2009**

**Arrival of the students and registration**

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**Monday**  
**30 November 2009**

- 10:00-10:30 Introduction of the Course**
- Eladio Fernandez-Galiano, Council of Europe
  - Evelyne Schvoerer, Université de Strasbourg

**10:30-10:45** coffee break

- 10:45-12:00 Physics and climate change: gas emission and risk management**
- *J-P Massue, Member of the National Council of Orientation for the Prevention of Major Natural Hazards of the MEEDM*

**12:00-14:00** lunch

- 14:00-16:00 Energy threshold of climate risk and impact on health: example of Sahara for 10 000 years and limits of people to adapt**
- *Max Schvoerer, Centre de Recherche en Physique Appliquée à l'Archéologie, Université de Bordeaux III, France*

- 16:00-16:30: Proposal & guidelines for final reports to be done by the students**  
**Registration (checking)**
- *Evelyne Schvoerer*
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**Tuesday**  
**1 December 2009**

- 10:00-12:00 Emerging viral diseases and climate change (vector-related viruses, social crisis and viruses)**
- *E Schvoerer, Laboratoire de Virologie, Faculté de Médecine et Université de Strasbourg*

**12:00-14:00** lunch

- 14:00-15:30 Climate change: bacterial diseases and enteric concern**
- *B. Jaulhac, Laboratoire de Bactériologie, Faculté de Médecine et Université de Strasbourg*

**15:30-16:00** coffee break

- 16:00- 17:30 Malaria favoured by a large distribution of insects dispersing the infectious agents**
- *E. Candolfi, Laboratoire de Parasitologie, Faculté de Médecine et Université de Strasbourg*
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**Wednesday**  
**2 December 2009**

- 9:00- 10:30**     **Water cleaning networks: collection and treatment**
- *A. Sadowski, Ecole Nationale du Génie de l'Eau et de l'Environnement de Strasbourg (ENGEES)*
- 10:30-12:00**     **Continental hydrology: climate and water circulation in continents, characterization of extreme events**
- *C. Grégoire, Ecole Nationale du Génie de l'Eau et de l'Environnement de Strasbourg (ENGEES)*
- 12:00-14:00**     lunch
- 14:00-15:30**     **Hydro-ecology: ecology of humid areas, water and sediment transfer**
- *M. Trémolières, Ecole Nationale du Génie de l'Eau et de l'Environnement de Strasbourg (ENGEES)*
- 15:30-16:15**     coffee break
- 16:15- 17:45**     **Coral reefs are they subject to the storm climate (el niño and coral disappearance)**
- *Mrs Pascale Joannot, Océanographe, Paris*
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**Thursday**  
**3 December 2009**

*Applied exercises*

- 9:30-10:00**     **Description of an extreme weather event and its monitoring: "Acute storm and consequences on water network and on human health"**
- *C. Grégoire, ENGEES & V. Hébinge, SAMU 67 (Emergency medicine), University Hospital of Strasbourg*
  - *with the participation of A. Sadowski, ENGEES; E. Schvoerer Virology, Strasbourg; T. Lavigne, Infectious Diseases, University Hospital of Strasbourg*
- 10:00-11:00**     **Working subgroups by students**
- 11:00-12:00**     **Oral presentation of the analysis of the climatic accident and its environmental and health consequences, by the students**
- 12:00-14:00**     lunch
- 14:00-15:30**     **Environmental consequences, analyzed by the teachers**
- *C. Grégoire, A. Sadowski*
- 15:30-16:00**     coffee break
- 16:00- 17:30**     **Consequences on human health, analyzed by the teachers**
- *V. Hébinge and colleagues, T. Lavigne*
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**Friday**  
**4 December 2009**

- 9:30-11:00**      **Respiratory diseases (asthma and infections) in case of climate change**
- *N. Amarouch, Physician, Respiratory diseases, Casablanca, Morocco*
- 11:00-12:00**      **Socio-economic aspects of climate change in their international context**
- *S. Busuttil, President of the Malta Foundation, Valetta, Malta*

*Departure of the students*

***Students will be proposed a subject to write a 5-page manuscript, which should be sent by e-mail to Evelyne Schvoerer (needed to obtain the 3 ECTS).***