Environmental Management in a Changing World: Coping with Sea Level Rise

Summer program in Venice

14 – 27 July 2014

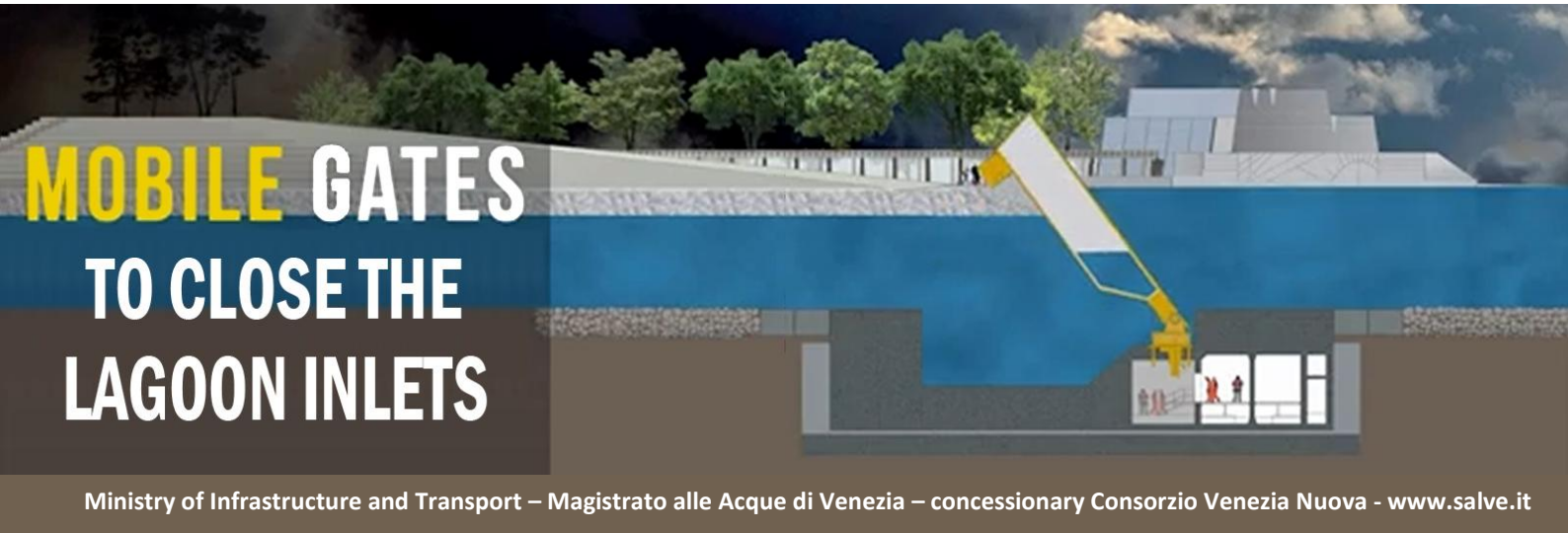
Duke
NICHOLAS SCHOOL OF THE ENVIRONMENT

Venice International University

The Nicholas School of the Environment (Duke University) and the Venice International University offer a Summer Program that provides training in key topics about the impact of sea level rise on coastal areas and cities, and about adaptation and mitigation strategies.

Program aim:

What will be the impact of sea level rise on the world's coastal areas and coastal cities? What are the social and economical consequences? and what is the forecasted impact on the population health? Should we plan for a "sustainable development" or a "strategic retreat"? And if a strategic retreat is chosen what are the implications for our cultural heritage and legacy? What monitoring and management tools are currently available or should be developed in the near future? The course aims to give students a broad perspective on the impact of sea level rise upon coastal areas from the social, economical and environmental point of view. Adaptation and mitigation strategies will be analyzed and students will be involved in discussions on critical management issues, developing their own critiquing concepts in a multidisciplinary framework. Participants will learn, in class and in the lab, the use of operational tools for coastal zone monitoring and management, and will participate in two field campaigns aimed at exploring the most up-to-date techniques for coastal defense and protection. The Venice Lagoon will be used as a "laboratory", the ideal setup to study the intertwined dynamics of human and natural systems. The Venice Lagoon is a diverse ecosystem providing invaluable services, which has been deeply transformed over the long history of the Venetian State and, in more recent years, by extremely impacting engineering works. The area also has a rich history with people whose families have resided in the city for generations and have strong attachments to the area. Hence, it is an exceptionally well-documented case of the coexistence of the natural and the built environments, of the tension between sustainable and unsustainable uses of natural resources, and the potential for vigorous political controversy over possible adaptation strategies. The MOSE system, the systems of gates currently being constructed to protect the city of Venice from extreme high tides, is just an example of the important infrastructures that the students will visit.



Topics:

- **Causes and consequences of global environmental change.**
- **Modelling and prediction of environmental changes in coastal areas.**
- **Social, economic and political impacts of sea level rise.**
- **Environmental monitoring and management of coastal morphology and water quality: strategies and technologies**
- **The resilience of coastal human-natural systems.**
- **Sustainable development along the coast: strategic retreat or coastal protection/conservation?**
- **Global health and climate change: future scenarios in coastal areas.**

Target:

Undergraduate and graduate students from any university and any discipline with an interest in environmental issues, and able to read and write fluently in English. Applicants familiar with these subjects and already working in private companies or public administrations are welcome.

Program structure:

The course duration is 2 weeks. Students will attend lectures or labs every day, 6 days per week and will participate in field trips in the Venice Lagoon and its surrounding.

Duration and period:

2 weeks, 14 - 27 July 2014

Location:

San Servolo Island, Venice (Italy).

Credits:

An official **Duke University, Nicholas School Diploma** will be issued at the end of the course. For information on ECTS credits please refer to the website at http://www.univiu.org/shss/seminars-summer-schools/rising-sea-levels or contact the Venice International University office at shss@univiu.org

Program director:

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Program tuition and fees:

Tuition fees for the 2014 edition is EUR 2.000 (about $ 2,600) and include course materials, use of VIU facilities, fieldtrips in the Venice lagoon and a social dinner.
An all inclusive formula is also available and includes all the above plus accommodation and lunch on weekdays. In this case the cost of the two weeks program is EUR 2.900 (about $ 3,800)

The cost of the program does not include: - Passport and visa if necessary - Travel to and from the country of origin - Meals on weekends, dinners and breakfasts - Travel and health insurance (mandatory) - Personal expenses and anything else not listed.

Courses:

- **Global environmental change, global warming, changing oceans and sea level rise** (Nicolas Cassar, *Division of Earth & Ocean Sciences, Nicholas School of the Environment, Duke University*)
- **The impact of sea level rise and climate change on global water resources** (Avner Vengosh, *Division of Earth & Ocean Sciences, Nicholas School of the Environment, Duke University*)
- **Coastal wetlands ecology, restoration and management** (Brian Silliman, *Division of Marine Science & Conservation, Nicholas School of the Environment, Duke University*)
- **Coastal environmental change processes: modelling and prediction** (Andrea D'Alpaos, *Department of Geosciences, University of Padova*)
- **Environmental monitoring of coastal morphology and water quality** (Sonia Silvestri, *Division of Earth & Ocean Sciences, Nicholas School of the Environment, Duke University*)
- **Sea level rise and coastal areas: economic assessment of policy strategies** (Brian Murray, *Nicholas Institute, Duke University*)
- **Globalization, environment and sustainable development in coastal areas** (Ignazio Musu, Venice International University *and Ca' Foscari University*)
- **Climate change, sea level rise and global health in coastal areas** (William Pan, *Duke Global Health Institute and Nicholas School of the Environment, Duke University*)

Scholarships:

A limited number of scholarships are available and will be assigned on the basis of merit criteria. Please contact the VIU office for further information.

Complete information about the program is available at:
http://www.univiu.org/shss/seminars-summer-schools/rising-sea-levels

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