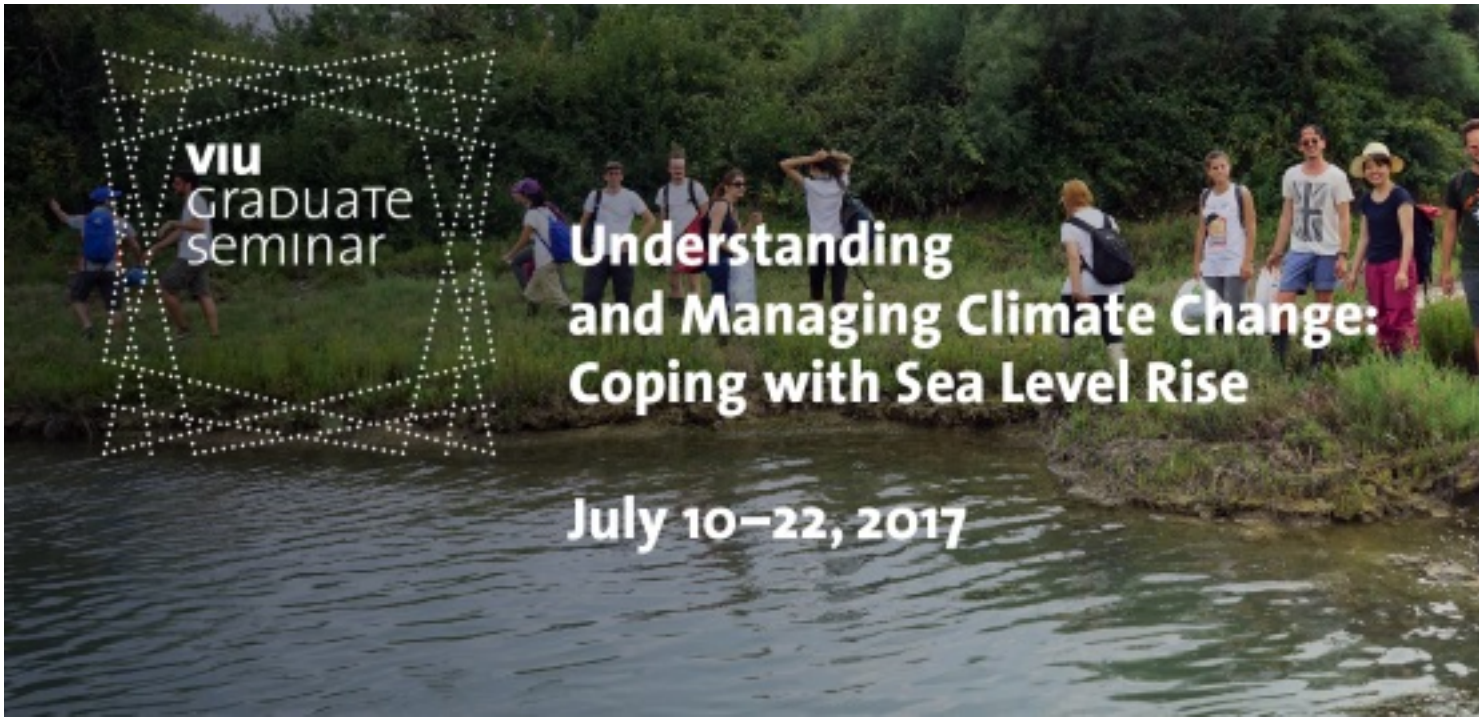


Graduate Seminar

Understanding and Managing Climate Change: Coping with Sea Level Rise

2017 edition - 10-22 July 2017

The 2017 Seminar will be led by:
- Duke University *(Sonia Silvestri, Scientific Coordinator)*
- National Research Council of Italy
- Università degli Studi di Padova
- Universitá Ca' Foscari Venezia

- Università IUAV Venezia

- INRS University

- KU Leuven

Course aim
The symptoms of Global Warming, and in particular an accelerating Sea Level Rise, are already detectable in several regions of the globe. The discussion, at a governmental level, on the importance of reducing greenhouse gas emissions is ongoing, but strategic decisions have to be taken soon in particular in regard to low-lying coastal areas and cities, considering that coastal areas less than 5 meters above sea level are home to roughly 200 million people worldwide (World Ocean Review 2013).

The Graduate Seminar will give students a broad perspective on the impact of Climate Change and Sea Level Rise upon coastal areas from the social, economic and environmental points of

view. Causes and consequences of global warming, and its impact on the state of the oceans and internal seas will be addressed and discussed, and changes in the hydrological cycle will be examined. Using data and models to explore future scenarios, the impact of sea level rise on coastal morphology, ecosystems, water resources, population and health will be presented and discussed. Students will explore, in class and in the lab, state-of-the-art monitoring technologies and available datasets. Through analysis of adaptation and mitigation strategies and engaging discussions on critical management issues, students will develop their own critiquing concepts in a multidisciplinary framework.

The Venice Lagoon will be used as a “laboratory”, the ideal case-study to explore 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. There will be four field trips closely linked to the topics discussed in class in order to explore some of the issues caused by Sea Level Rise in the lagoon and surrounding areas.

Topics

• Causes and consequences of global environmental change and Sea Level Rise: available records, models and future projections
• Global warming and changing oceans: models and examples
• Ecological aspects of the impact of global warming on life in the oceans
• The impact of sea level rise and climate change on global water resources
• Extreme events in coastal areas: data analysis and modelling
• Coastal ecogeomorphological processes: modelling of current dynamics and prediction of future changes
• Coastal wetlands ecology, restoration and management
• Observations and monitoring systems for the management of coastal areas
• Social, economic and political impacts of sea level rise
• Climate change, sea level rise and global health in coastal areas

Detailed program

Available at this link

Methodology
Students will follow theoretical lectures every morning and will be required to participate in discussions about the impact of global environmental change on coastal areas. The four field trips will provide the opportunity to collect data and samples that will be analyzed within specific hands-on activities in the VIU computer lab. Students will develop an extensive knowledge on models, predictions, and related uncertainties.

Learning outcomes of the program
At the end of the course students will be familiar with the physical processes that generate the global warming phenomenon, and will understand the impacts of changing oceans and rising sea levels on human and natural systems.

Target
Master's students and PhD candidates from VIU partner universities. Candidates from non-member institutions will be also considered if invited by the scientific coordinator.

Fees & Grant Support

Students from the VIU member universities will pay no participation fees. Grant support is also available to support, partially or fully, the costs of international travel and accommodation.
The participation fee for students from non-member institutions is € 1220 (incl. tuition, course materials and taxes). Students from non-member institutions are not eligible for VIU grant support.

Credits
This program is equivalent to 3 ECTS.
This program has been included in the Master in Environmental Management (MEM) course listing at the Nicholas School of the Environment, Duke University.

Duration and period
2 weeks, 10 - 22 July 2017

Location
Venice International University, Island of San Servolo, Venice (Italy).

The final program will be available on the VIU website on February 10, 2017.

Applications:
February 7 – March 24, 2017.

Online application form available at this link .

For further information: summerschools@univiu.org


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seminar