**Course CU15062 - Integrated Coastal Zone Management**

**Short description of course set-up**

The course Integrated Coastal Zone Management (ICZM) will be taught for the first time at the Delta

Academy in the first semester of the course year 2014-2015, starting in the first week of September

2014. It is an obliged course in the fourth year of the study Delta Management, but the course is open

and recommended for all 4th year Delta Academy students. It is a 7,5 ECTS course. To serve the purpose

of Delta Academy broad courses, the three programmes of the Delta Academy (DM, CE and WM) have

cooperated to develop the content and the learning goals of the new course.

The content of the course is divided in two parts and accompanied by individual assignments in the first

5 weeks and a group assignment from the 5th week on:

**Part 1** exists of 5 theory lectures on the broad concept of ICZM and two introduction lectures on

ICZM in Belgium. During the first 5 weeks the coastal developments around New York after

Hurricane Sandy (Rebuild by design) will be used as study material for the individual

assignments. In the fifth course week the practical assignment at the Belgium coast will be

introduced by an excursion to the project location at the harbor of Blankenberge followed by a

background lecture on ICZM in Belgium and a lecture on silting up of harbors.

**Part 2** exists of 7 lectures on the practical examples of innovative adaptive coastal measures.

During this period the group assignment is executed. At the end of the course (in the week from

11th-17th of January) the students will present their end-results to the project commissioner.

**Learning outcomes**

On successful completion of this module, students will have:

Acquired, the methodological and conceptual tools necessary for assessing and implementing integrated policies for the coastal area at different scales.

**Aims**

Understanding of the complexities inherent in the principles of ICZM and governance, linking these theoretical and policy aspects to actual implementations and the difficulties encountered in the field.

**Literature**

The book that accompanies the course is: Climate of Coastal Cooperation, written by Robbert Misdorp,

2011, ISBN number: 978-90-75502-09-1. This book is for sale as a hard copy, but also available as pdf

and can be downloaded from the internet (www.coastalcooperation.net) or from the VLD. Additional

literature like articles, will be supplied in the classroom and put on the VLD as well.

**Grading**

The course consists of a theoretical and a practical part. Both parts have to be graded with a score

higher than 5.5. The theoretical part consists of a midterm and final exam. Each exam forms 25% of the

final grade. The practical part forms 50% of the final grade. This part exists of the individual assignment

(35%) and the group assignment (65%).

**Content of the lectures**

Lecture 1: Introduction to ICZM: coastal areas are introduced and how they are defined (biophysical

and/or policy oriented), a brief history of coastal management. Introduction of individual assignment:

analyzing the results of the Rebuild by design competition (Liliane Geerling)

Lecture 2: Coastal management issues: population growth and urbanization, coastal use (resource

exploitation, infrastructure, tourism and recreation, conservation reserves and protection of

biodiversity), impacts of human use, administrative and legal issues. (Liliane Geerling) Plus guest lecture

by bureau PalmBout Urban Landscapes on the plan ‘Living with the bay’ in which they collaborated with Interboro / Apex / Bosch Slabbers / Deltares / H+N+S / Palmbout / IMG Rebel with Center for Urban Pedagogy, David Rusk, NJIT Infrastructure Planning Program, Project Projects, RFA Investments, TU Delft.

Lecture 3: Major coastal management and planning techniques: administrative coastal management and

planning techniques, social coastal management and planning techniques and technical approaches to

coastal planning and management. (Liliane Geerling) Plus guest lecture by bureau Urbanisten on the plan ‘New Meadowlands: Productive City + Regional Park’ in which they collaborated with MIT CAU + ZUS + URBANISTEN with Deltares; 75B; and Volker Infra Design.

Lecture 4: Coastal management planning (statutory basis, requirements of coastal management plans,

degree of plan integration, designing a framework, international context). (Liliane Geerling)

Lecture 5: Spatial plans for the Belgium coast (guest lecture rijksbouwmeester Vlaanderen)

Lecture 6: Silting up of coastal harbors (Bram Verkruysse)

Lecture 7: Coastal Cooperation and worldwide examples (guest lecture Robbert Misdorp)

Lecture 8: Eco tourism (Bram Verkruysse)

Lecture 9: Building with Nature: principles and examples (Joao Salvador de Paiva/Mindert de Vries)

Lecture 10: Sand Nourishment (Joao Salvador de Paiva)

Lecture 11: Flood-proof architecture (guest lecture by Waterstudio)

Lecture 12: Energetic coasts (salinization/fresh water, wind energy, solar energy, tidal energy) (guest

lecture)

Lecture 13: Adapting to cyclone storm surges (Joao Salvador de Paiva)

Lecture 14: Mangrove replanting/ Floating vegetable bed cultivation (Bram Verkruysse)

**Content of the individual assignment**

“When Hurricane Sandy devastated communities in the region, we were reminded of the importance

that climate change will have in all development and planning for our communities to become more

resilient and sustainable.”

*Shaun Donovan, Secretary of the US Department of Housing and Urban Development (HUD)*

To address these challenges, U.S. HUD Secretary Donovan launched Rebuild by Design in June 2013 as a

multi-stage design competition to develop innovative, implementable proposals that promote resilience

in the Sandy-affected region. From 148 international applicants, 10 interdisciplinary teams were

selected to participate in Rebuild by Design’s year-long process and competition. These teams were

made up of practitioners ranging from architects, landscape-architects to regional and transportation

planners, engineers and community organizers. June 2nd 2014 six winning plans were selected to be

worked out. Your task is to critically analyze one of the winning proposals and to write a report on the

strengths, weaknesses, opportunities and threats of the chosen proposal from the perspective of ICZM.



*‘Living with the bay’*

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*‘New Meadowlands: Productive City + Regional Park’*

**Content of the group assignment**

After the fifth lecture (in the week of October 5th) an excursion will be made to the project location, for

the practical assignment. Not only to explore the area, but also to have talks/interviews with the local

stakeholders. The project area for the practical assignment is at the Belgium coast. The project is located

in the harbor of Blankenberge. The students need to develop an advice for a seaward extension of the

breakwaters in Blankenberge with the dual purpose of preventing silting up of the harbor entrance and

the natural sedimentation of the bathing zone. This siltation is a such a serious problem, that even

during the holiday season sometimes yachts are not able to enter or leave the harbor and extra

dredging needs to be executed. Some of the measure one can think of are:

To extend or raise existing dams

To extend or raise existing groynes

To build new dams at another location

To design a foreshore, or alike





