

Advanced Environmental Coastal Engineering

(1) Name of Lecturer: Ioan NISTOR

(2) Position: Associate Professor and Vice-Dean Graduate Studies

(3) Affiliation: Department of Civil Engineering, University of Ottawa, CANADA

(4) Short Biography: Dr. Ioan NISTOR is an Associate Professor of Hydraulic and Coastal Engineering in the Department of Civil Engineering of the University of Ottawa, Canada, and Vice-Dean (Graduate Studies) of Faculty of Engineering. Dr. Nistor is a coastal and hydraulic engineer researching hazards associated with extreme hydrodynamic loading on infrastructure (tsunami impact on infrastructure, extreme wave and flood forces on structures, dam failure phenomena, etc.) and he is currently the Vice-Chair of the Maritime and Coastal Division of International Association for Hydro-Environment Engineering and Research (IAHR) and a member of the Board of Directors of the Canadian Coastal Science and Engineering Association. He is also a voting member of the new ASCE7 Subcommittee for the elaboration of New Design Guidelines for Tsunami-Resistant Buildings. Dr. Nistor is also an Associate Editor of the Coastal Engineering Journal (JSCE – Japan), of the Canadian Journal of Civil Engineering (CSCE-Canada), and of the Journal of Waterways, Ports, Coastal and Ocean Engineering (ASCE – United States). He is the winner of several research and teaching awards: 2010 Award of the Tsunami International Society, 2010 Excellence in Education Award of the University of Ottawa, 2009 John V. Marsh Teaching Award of the Faculty of Engineering, 2005 Ontario Ministry for Infrastructure Renewal.

(5) Subject and Schedule of the Lectures:

The following lectures were offered as a part of the course “Environmental Coastal Engineering” offered in the Department of Civil and Environmental Engineering of Hiroshima University.

Tuesday, April 21 (10:30 – 12:00)

LECTURE 1: Introduction and Coastal Modelling

LECTURE 2: Tsunami Impacts on Structures

Wednesday, April 22 (10:30 – 12:00)

LECTURE 3: Wave Theory: Linear, Stokes and Cnoidal Waves

Wednesday, April 22 (12:50 – 14:20)

LECTURE 4: Surfzone Hydrodynamics – Wave transformation and breaking

THURSDAY, April 23 (12:50 – 14:20)

LECTURE 5: Sediment Transport Mechanisms

Friday, April 24 2 Lectures (10:30 – 12:00 and 12:50 – 14:20)

LECTURE 6: Coastal Morphodynamics

The first lecture contains an introduction on coastal modeling, with various examples of research projects in coastal and hydraulic engineering. The second lecture dealt with a comprehensive presentation of the engineering lessons drawn from a post-tsunami forensic investigation of the impact of the 2011 Tohoku Tsunami on the built infrastructure along the Sanriku coastline in Japan.

Lecture three is dealing various basic wave theories, particularly linear wave theory. The lectures are specially designed for coastal engineers, but any regular graduate civil engineering student with a reasonable background in mathematics, fluid mechanics and hydraulics can follow the lectures.

Lecture four deals with the nearshore wave transformation (diffraction, refraction, shoaling, etc) and wave breaking in the surfzone.

Lecture five deals with sediment transport mechanisms (cross-shore and long-shore) under the action of wave and currents.

Lecture six is a supplementary reading lecture dealing with the morphodynamic processes that lead to changes in the long-shore and cross-shore beach profile evolution.

(6) Comments:

The course provided me with an excellent opportunity to teach students with different graduate specializations some of the basic concepts of Coastal Engineering. I would evaluate the class of this year a bit better than the past courses which I taught here:

- a. Again, my main comments towards improving the teaching experience of the Japanese students would be to encourage them to ask questions and to communicate more during the class. As a former PhD Monbusho student myself, I am relatively familiar with the Japanese academic culture. I think students need to be encouraged to ask questions and challenge the professor: the lecture has to be a bi-directional experience – I also expect to learn from my graduate students.
- b. I suggest that Hiroshima University introduces some classes on Communication and Professional Development to help Japanese students to get more comfortable to interact with foreign teachers.
- c. Several students seem tired and lacking energy. Just as mentioned following the last year’s course, I think that the students need to be counseled on work/life balance since this is important for their capacity of learning and advancing their knowledge.
- d. The students seemed connected to the course and I have also managed to get them some lectures related to practical applications in coastal/hydraulic engineering - students seemed to be receptive to this approach.

Just as in the past several years, due to time limitations, I could only prepare and administer one simple assignment for this section of the course. Below are the results of the assignment which I asked them to prepare:

	Mark	Comments
	Pass	Good assignment and well organized: the student seemed mature in his written discussion.
	Pass	Good English and very organized and well-structured assignment.
	Pass	Quite good English – the assignment was a bit on the short side but well written
	Pass	Very good English and a structured assignment: pays attention during the course as well.
	Pass	Short assignment, though structured – needs more training in English
	Pass	Good English and well-organized assignment
	Pass	Short and concise assignment (maybe too concise). Seems to be attentive during the course
	Pass	Good assignment but needs better training of the English language – seems to be connected to the lectures during class.
	Pass	Short assignment but written in good English – seems to be a keen and determined student.
	Pass	Simply the BEST written and interesting assignment!
	Pass	Short assignment, not too many details but OK.



