



Course announcement
"Advanced Topics in Port and Coastal Engineering"
Prof. A. Saponieri



Hours 8 - cfu
Classes will be in English
Compulsory attendance

Final essay based on a set of questions provided on the first day. Final essay is compulsory to obtain the cfu.

Advanced Topics in Port and Coastal Engineering

General purpose

The purpose of the course is to provide extended knowledge on hydrodynamics of wave motion, focusing on the fundamental role of water waves in all nearshore dynamics, with particular reference to waves/coastal-port structures interaction. The interplay between fundamental physical phenomena and their mathematical description will be analysed, together with statistical analyses and numerical approaches used in coastal engineering to evaluate environmental loads related to waves, currents and wind. Projected climate changes and possible consequences for the coastal/port structures will be also dealt, with particular reference to the effects of the increasing extreme storm events and sea level rise in structure design.

Specific contents

Wave mechanics and processes that affect ocean waves from deep to shallow waters water towards the coast; Design principles of coastal and port structures (statistical analyses of extreme events – loads calculation for structures design – waves/structure interaction); Advanced mathematical models and numerical approaches in coastal engineering; The effects of climate changes in the design and management of coastal and harbour structures.



Objectives

- Gain a knowledge of the main principles of waves mechanics;
- Understanding traditional and innovative techniques used in the design and construction of port and coastal structures;
- Gain a knowledge of the engineering principles involved in the design and operation of port facilities, including terminals, jetties, and dredging;
- Identify the risks and learn how to manage the potentially disruptive impacts of climate change and sea level rise on port and coastal infrastructure;
- Acquire skills in modeling and simulation technology and advanced data analysis techniques to improve the efficiency and performance of port and coastal facilities.

Overall, the Advanced Topics in Port and Coastal Engineering Ph. D. course aims to equip participants with the knowledge, skills, and practical tools required to design, build, operate, and maintain state-of-the-art port and coastal infrastructure in a rapidly changing global environment.

✉ Register by sending email to:

tea.taraborelli@unich.it

For those not at University of Chieti-Pescara it is possible to follow the short course online: specify request when you register.

TIMETABLE			
MONDAY 18th March 2024	2 hours	9:00	11:00
TUESDAY 19th March 2024	2 hours	9:00	11:00
WEDNESDAY 20th March 2024	2 hours	9:00	11:00
THURSDAY 21th March 2024	2 hours	9:00	11:00