

Strategic Plan of CENTEC 2025-2029

CENTEC aims at continuing to be one of the world's leading research centres in the area of Marine Technology and Ocean Engineering, specifically covering the subject areas of Marine Environment, Marine Dynamics and Hydrodynamics, Marine Structures, Maritime Transportation and Ship Design and Safety, Reliability and Maintenance.

Currently, the proposed plan for strategic development of CENTEC is focused on consolidating its core areas and in developing new research areas that will allow it to continue in the forefront of research in the area of Marine Technology and Ocean Engineering worldwide.

The consolidation of the core research areas is done through the research lines of the existing research groups, which include more than 45 PhD researchers:

- Marine Environment.
- Marine Dynamics and Hydrodynamics.
- Marine Structures.
- Maritime Transportation and Ship Design
- Safety Reliability and Maintenance

The plan for strategic development of new research areas is done through a series of thematic lines, involving contributions from one to all five groups:

- Autonomous Ships and Vehicles
- Renewable Energies Offshore.
- Energy Efficiency in The Design and Operation of Ships.
- Safety of Maritime Operations and Structures
- Blue Economy

The direction of Autonomous Ships and Vehicles will address intelligent ships, with various degrees of autonomy, leading to fully autonomous ships in the future, addressing among other aspects, guidance, control and manoeuvring.

The Renewable Energies will address resource evaluation, dynamics, strength, safety and maintenance of the equipment used for the various forms of renewable energy offshore.

The study on Energy Efficiency in the Operation of Ships will concentrate on the transition to green ships and on the energy efficiency during operations, without compromising safety in storm conditions.

Safety of Maritime Operations and Structures addresses the probabilistic methods used in reliability assessment and risk analysis, considering the influence of human factors and of maintenance plans

Attention will be given to the various aspects of Blue Economy by looking at the interfaces and synergies of activities like renewable energy, offshore aquaculture, maritime operations and other new uses of the sea.

It is envisaged to give continuity to Advanced Education through research, providing training to PhD students and experience to post-doctorate researchers, in an environment of wide international research cooperation. Dissemination will also be one of the main directions through the publication of journal papers and participation in conferences as well as organizing international conferences and seminars.