



**Politecnico  
di Torino**



## **Design of a water ballast management system and its control for offshore floating structures**

Master thesis proposal at the Marine Offshore Renewable Energy Lab Department of Mechanical and Aerospace Engineering Politecnico di Torino

### **👤 Recommended profile:**

Mechanical Engineering, Aerospace Engineering, Civil Engineering

### **💡 Topics involved:**

Floating islands

### **✉ Contact references:**

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## **Proposal description**

The topic of this thesis is the design of a water ballast management system for application on offshore floating structures. These systems consist of the presence of several water-containing ballasts within floating structures, the control of which allows the adjustment of the buoyancy of these structures. Objectives of the thesis are:

- development of a mechatronic model for the simulation of the water ballast management system
- study and synthesis of a control logic of such a system for the adjustment of the buoyancy of floating structures

This thesis activity is part of the "Seaform" project studying the feasibility of creating communities on floating artificial islands (<https://www.seaform.it/>)