

## TFK programme, funded projects 2022

<p><b>Project title:</b> Maritime Engineering Collaborative Education Framework – Finland and Latin America</p>	
<p><b>Coordinator</b></p> <p>Aalto korkeakoulusäätiö sr (Aalto University Foundation sr) operating as Aalto U</p> <p>Osiris A. Valdez Banda osiris.valdez.banda@aalto.fi</p>	<p>The MARENGEDU-FINLAT framework focuses on establishing collaboration in education between Finland, Argentina and Mexico to establish international mobility and online participation of university students and staff for the study of sustainability and safety in maritime and ocean engineering. The framework has an agile characteristic to consider how principles, methods and tools for sustainability, safety and engineering can be properly adapted to the contexts and the needs of the maritime clusters in Finland, Argentina and Mexico. The focus of the collaboration is on the design and operation of sustainable and safe engineering concepts for ship design, maritime traffic, maritime structures and terminal operations with specific considerations of navigation in extreme environments and the operations of oil cargo ships, marine platforms and port terminals.</p> <p>MARENGEDU-FINLAT focuses on specialized education around four specific main topics. First, ship design and operation. This first topic is composed of the study of disciplines such as naval architecture and ship product development, the selection and engineering of critical systems allocated onboard the vessels and the ship operational context on the sea and ashore, the principles of mechanics applied in ship structural design, and the principles for ship resistance, propulsion, maneuvering and hydraulics. The second main topic is the study of sustainability and safety in maritime engineering. This second topic is composed of the study of the foundations of safety and sustainability, the methodologies for defining sustainability and safety requirements, the study of safety management in ships and ports, and the study of maritime sustainability endangers and promoters. The third main topic is the studies in winter/ice ship navigation. This third topic is composed of the study of subtopics such as the occurrence, formation and structure of sea ice, different types of ice, mechanical properties and contact of ice with structures (ship and offshore), the management of systems for ensuring the basic principles for ship power requirements and hull ice-strengthening, and finally, the requirements and possibilities to model different ice conditions in ice model basins. The fourth main topic covers the studies of ship oil transport and maritime oil logistics. This fourth topic is composed of the study of the characteristics of oil tankers and their transport operations, oil platforms and port terminals operations, and oil emergency prevention and response.</p> <p>The MARENGEDU-FINLAT framework aims at establishing a solid platform to strengthen the collaboration of education of maritime and ocean engineering between Finland and Latin America with a clear objective to educate the future professionals of critical industrial domains in Finland, Argentina and Mexico.</p>
<p><b>Partners</b></p> <p>Instituto Tecnológico de Buenos Aires, Argentina, Instituto Tecnológico de Ciudad Madero, México, Universidad de Colima, México</p>	



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