



14 LIFE BELOW WATER

Stewardship



Green and Sustainable Campus Policy for Life Below Water

ITS demonstrates its strong commitment to preserving life below water through the Rector's Circular Letter on Green and Sustainable Campus (2024) which covers responsible water and waste management to prevent water pollution and protect marine ecosystems.

The university also implements a comprehensive procedure for wastewater treatment to ensure proper handling of effluents. In addition, ITS canteen regulations emphasize reducing plastic use and eliminating single-use materials to minimize pollution impacts on aquatic environments.

Teaching



(Source: Universitas Hang Tuah)

Guest Lecture on Sustainable Coastal Engineering

ITS, in collaboration with Universitas Hang Tuah, held a guest lecture entitled "Sustainable Coastal Engineering: Techniques and Practices for Coastal Resilience", featuring Prof. Hitoshi Tanaka from Tohoku University, Japan. Attended by lecturers and students from both universities, the lecture integrated sustainability values into the learning process through discussions on sustainable coastal engineering methods and strategies to enhance coastal resilience in the face of climate change.

Outreach



Water Quality Improvement through Filtration and Reverse Osmosis System

A team from the Department of Chemistry ITS implemented a water quality improvement program in Kampung Eduwisata Sanan, Malang, an area with limited access to clean freshwater. The initiative introduced an innovative water treatment system that integrates filtration and reverse osmosis (RO) technologies to reduce iron (Fe) and manganese (Mn) levels in groundwater, improving its safety for daily use. Beyond providing a practical solution, the program also empowered local residents through education on sustainable and community based water treatment practices.



Mangrove and Coral Reef Conservation Program on Bawean Island

A sustainability outreach initiative led by ITS organized a coastal conservation program on Bawean Island, involving the planting of 150 mangrove seedlings and coral reef restoration activities. The program was carried out in collaboration with PT PLN (Persero), the Environmental Agency of Gresik Regency, the Hijau Daun Community, and student volunteers from several universities. In addition to ecosystem restoration, the team conducted educational activities to raise public awareness of marine conservation and the importance of preserving coastal biodiversity.

Research

Development of a Multi Purpose Floating Navigation Vehicle

As a leading technological university, ITS collaborated through the Matching Fund (MF) Kedaireka program with PT Adiluhung Sarana Segara Indonesia to develop a prototype of a Multi Purpose Floating Navigation Vehicle.

This innovative vessel integrates marine renewable energy systems powered by solar and wind energy, replacing fossil fuel-based power sources. The project contributes to reducing water pollution and carbon emissions, promoting cleaner and more sustainable maritime operations.



Assessment of Mangrove Ecotourism Governance Using the RRR Framework in Surabaya

In 2024, ITS lecturer Yanto Budisusanto and his research team conducted and published a study on Mangrove Ecotourism in Gunung Anyar and Medokan Sawah, Surabaya. The research aimed to evaluate land management rights, land use restrictions, and management responsibilities to ensure the sustainable utilization of the Surabaya Mangrove Garden in alignment with spatial planning and conservation policies. Using the RRR (Rights, Restrictions, and Responsibilities) framework, the study provides valuable insights for improving policy coherence and sustainable coastal

“The ocean must not be exploited without regard for its sustainability.”

—Dr. Ing. Ir. Setyo Nugroho (Lecturer,
Department of Marine Transportation Engineering
ITS)