

COURSE SYLLABUS

New Materials and Technologies Applicable in the Marine Environment

2324-3-128R-NEWMAT

Title

New materials and technologies applicable in the marine environment

Teacher(s)

Marco Contardi

Language

English

Short description

Materials used in the marine activity or dumped in the marine environment are a significant source of pollution. Therefore recent studies are focused on green processes and on the utilization of biodegradable materials as valuable alternatives of the already existing ones. In this course a general overview of the materials used or dumped in the marine environment will be presented and their contribution to the overall marine pollution will be discussed together with the effects to the marine ecosystem. Basic knowledge of the physico-chemical properties of some of these materials will be showed to understand their fate in the environment and why they can be

considered pollutants. Then, the recent advances on the development of novel biodegradable materials for marine applications will be presented, and will be discussed how they can reduce the environmental impact and therefore limit the pollution effects. The concepts of sustainability, biodegradability, and circular economy will be also explained. Finally, some recently developed economically and environmentally sustainable functional materials applied in diverse marine related applications such as water remediation and desalination, green paints for shipping, medication of marine organisms will be presented.

CFU / Hours

1 CFU/8 hours

Teaching period

September 2024

Sustainable Development Goals

CLEAN WATER AND SANITATION | RESPONSIBLE CONSUMPTION AND PRODUCTION | LIFE BELOW WATER
