

## ANNEX 2 – COURSE DESCRIPTION

Course Title	<b>Maritime Sustainability Management I</b>			
Course Code	<b>ITSM516</b>			
Course Type	<b>Elective</b>			
Level	<b>MSc (Level 2)</b>			
Year / Semester	<b>1<sup>st</sup> Year / 1<sup>st</sup> Semester</b>			
Teacher's Name	<b>Dr Demetris Kletou</b>			
ECTS	<b>6</b>	Lectures / week	<b>3</b>	Laboratories/week <b>NONE</b>
Course Purpose	<p>The course aims to raise environmental awareness and to equip students with knowledge, skills and competences to lead and innovate in the field of environmental sustainability in shipping, making significant contributions to reducing the industry's environmental impact.</p> <p>Learners will be prepared to become the future maritime workforce for a career where sustainability matters, and blue growth is a high priority.</p>			
Learning Outcomes	<p>By the end of the course, the students should be able to:</p> <ul style="list-style-type: none"> <li>• Demonstrate understanding of marine ecosystems and the principles of environmental sustainability.</li> <li>• Explain how the marine environment is adversely affected by major pressures caused by shipping and ports and assess mitigation practices for each pressure.</li> <li>• Critically evaluate the international regulatory framework related to marine environmental protection and sustainability in shipping.</li> <li>• Able to define the role of environmental officers and explain how to enhance sustainability in the maritime sector.</li> </ul>			
Prerequisites	None	Corequisites	None	
Course Content	<p><b>Introduction to environmental sustainability</b></p> <ul style="list-style-type: none"> <li>• Definition and importance</li> <li>• Core principles</li> <li>• Current environmental challenges</li> </ul> <p><b>Marine biodiversity and ecosystems</b></p> <ul style="list-style-type: none"> <li>• Oceanography</li> <li>• Marine ecosystems</li> <li>• Marine species and biodiversity</li> <li>• Food webs and trophic webs</li> <li>• Main human impacts on marine life</li> </ul> <p><b>Environmental impacts of shipping and mitigation measures</b></p> <ul style="list-style-type: none"> <li>• Oil and other chemical spills</li> <li>• Sewage and marine litter</li> <li>• Air pollution</li> <li>• Transport of invasive species</li> </ul>			

	<ul style="list-style-type: none"> <li>• Other types of impacts e.g. noise pollution, collisions with megafauna, etc.</li> <li>• Port construction and operations</li> </ul> <p><b>International legal framework</b> for environmental protection in the maritime sector, emphasis given on International Maritime Organization (IMO) regulations:</p> <ul style="list-style-type: none"> <li>• MARPOL Annexes</li> <li>• Ballast Water Management (BWM)</li> <li>• Anti-fouling Systems (AFS) Conventions</li> <li>• Safe and environmentally sound recycling of ships</li> </ul> <p><b>EU legal framework</b> such as:</p> <ul style="list-style-type: none"> <li>• Sulphur Directive (Directive 2012/33/EU)</li> <li>• EU Emission Trading System (ETS)</li> <li>• Corporate Sustainability Reporting Directive (CSRD)</li> <li>• Waste Framework Directive (Directive 2008/98/EC)</li> <li>• MRV Regulation (Regulation 2015/757)</li> <li>• Marine Strategy Framework Directive (Directive 2008/56/EC)</li> </ul> <p><b>Maritime Sustainability:</b></p> <ul style="list-style-type: none"> <li>• The Convention on Biological Diversity (CBD) and Barcelona Convention</li> <li>• Sustainable Development Goals (SDGs)</li> <li>• Environmental Social Governance (ESG)</li> <li>• Corporate responsibility &amp; The role of the Environmental/Sustainability officers</li> <li>• Emerging technologies and innovations</li> </ul>
Teaching Methodology	Lectures include PowerPoint presentations and discussions.
Bibliography	<p>Andersson, K., Brynolf, S., Lindgren, J. F., Wilewska-Bien, M. eds (2016). <i>Shipping and the Environment. Improving environmental performance in maritime transportation</i>. Springer, Berlin, Heidelberg, 2016. Pages 1-434, ISBN: 978-3-662-49043-3, doi: 0.1007/978-3-662-49045-7</p> <p>Harilaos N. Psaraftis (Ed.). (2019). <i>Sustainable Shipping: A Cross-Disciplinary View</i>. Springer</p> <p>Ng, A. K., Monios, J., &amp; Jiang, C. (Eds.). (2019). <i>Maritime Transport and Regional Sustainability</i>. eBook ISBN: 9780128191354</p> <p>Carpenter, A., Johansson, T. M., &amp; Skinner, J. A. (Eds.). (2021). <i>Sustainability in the maritime domain: towards ocean governance and beyond</i>. Springer Nature. ISBN 978-3-030-69325-1</p>
Assessment	<ul style="list-style-type: none"> <li>• Presentation of an Environmental Incident 10%</li> <li>• Research Assignment 30%</li> <li>• Final Exam 60%</li> </ul>
Language	English