Teaching Guide				
Identifying Data				2021/22
Subject (*)	Transport Economics		Code	730542014
Study programme	Master Universitario Erasmus Mundus en Sostibilidade e Industria 4.0 aplicada ao Sector Marítimo			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	2nd four-month period	First	Obligatory	3
Language	English			
Teaching method	Face-to-face			
Prerequisites				
Department	Enxeñaría Naval e Industrial			
Coordinador	Munín Doce, Alicia	E-mail	a.munin@udc.es	
Lecturers	Munín Doce, Alicia	E-mail	a.munin@udc.es	
Web	http://www.master-seas40.unina.it			
General description	The objective of this course is to provide the students the insights of how ships are used to earn money. In order to do so, the functioning of the maritime markets needs to be understood. Also, it is the aim to explain that ships are part of a larger logistics chain and that the interaction in the port and with the other transport modes is vital. Next to that, also the working principals of a port are explained even as hinterland transport. Finally, the current developments regarding emission reductions in the total transport chain are dealt with			
Contingency plan	- 1. Modifications to the content - - No changes will be made - 2. Methodologies - Teaching methodologies that are maintained - Supervised work - Teaching methodologies that are modified - Mixed objective/subjective test: using Microsoft Teams or equivalent institutional application - Master class: carried out through Microsoft Teams or equivalent institutional application, also leaving the students or their content in video format for later viewing - 3. Mechanisms for personalized attention to students - Email/MS Teams: Daily. Used to make queries, request virtual meetings to resolve doubts and perform or follow up on the work being protected. - Moodle: Daily. According to the needs of the students, who have forums in which they can export questions in general to the rest of the group. - 4. Modifications in the evaluation - No changes will be made - 5. Modifications of the bibliography or webgraphy - No changes will be made			

Study programme competences / results	
Code	Study programme competences / results

A6	CE6 - Demonstrate knowledge, understanding and competences in fulfilling safety, economic and sustainability requirements in ship operation and management (SO).
B2	CB6 - Acquire and understand knowledge that provides a basis or opportunity to be original in the development and / or application of ideas, usually in a research context.
B3	CB7 - That students know how to apply the acquired knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study.
B4	CB8 - That students are able to integrate knowledge and face the complexity of making judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.
B5	CB9 ? That students are able to communicate their conclusions -and the knowledge and ultimate reasons that sustain them- to specialized and non-specialized publics in a clear and unambiguous way.
B6	CB10 - That students have the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous.
B7	CG1 ? To display the adequate intercultural competence to successfully navigating within multicultural learning environments and to implement basic management principles suitable for a multicultural working environment.
B8	CG2 ? To express an attitude of intellectual inquisitiveness and open-mindedness.
B12	CG6 ? To appreciate the impact of sustainable development goals in maritime transport.
C2	CT2 - Mastering oral and written expression in a foreign language.
C4	CT4 - Acting as a respectful citizen according to democratic cultures and human rights and with a gender perspective.
C5	CT5 - Understanding the importance of entrepreneurial culture and the useful means for enterprising people.
C6	CT6 - Acquiring skills for healthy lifestyles, and healthy habits and routines.
C7	CT7 -Developing the ability to work in interdisciplinary or transdisciplinary teams in order to offer proposals that can contribute to a sustainable environmental, economic, political and social development.
C8	CT8 -Valuing the importance of research, innovation and technological development for the socioeconomic and cultural progress of society.

Learning outcomes			
Learning outcomes	Study programme competences / results		
Capability to understand how the maritime sector is structured, how it is part of a more complex logistic system and how ships and ports are integrated within it.	AC6	BC1 BC2 BC3 BC4 BC5 BC6 BC7 BC11	CC2 CC4 CC5 CC6 CC7 CC8

Contents	
Topic	Sub-topic
Lesson 2	Maritime lecture part 1: Economic organization of the shipping market. This will be a based on Stopford (2006)
Lesson 3	Maritime lecture part 2: Sub-markets & cash flow in shipping. Also this lecture will be based on Stopford (2006)
Lesson 1	Main introduction lesson where the global maritime transport chain is explained. This chain will include, maritime part of the transport, ports and the hinterland transport. The main objective here is to show that a ship is part of a bigger transport chain. A model (which has been developed by me) can also be offered to the students to make some calculations. This could be part of the paper/ assignment.
Lesson 4	Port lecture part 1: The organization of ports. What are ports, how do they function

Lesson 5	Port lecture part 2: The organization of ports. What are ports, how do they function, and what is the interaction with ships (bunkerings and provision of alternative fuels).
Lesson 6	Hinterland lecture part 1: Port hinterland transport. In this lecture is explained how cargo being shipped from ports to the hinterland and which transport modes can be used (road, rail, IWT).
Lesson 7	Hinterland lecture part 2: Modal choice, intermodal transport and hinterland infrastructure.
Lesson 8	Emission mitigation in maritime transport chains and the impact it has on both shippers and vessel owners. This course can include: A short introduction in the propulsion system of a vessel, Investments in new (retofitable) technologies in deepsea vessels due to legislation, Impact of the Environmental Efficiency Design Index (EEDI) of deepsea vessels on CO2 emissions, Impact of the Emission Control Area at the North Sea on port competition, Impact of the internalization of external cost on port competition.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A6 B4 B6 B7 B12 C4 C5 C6	18	18	36
Supervised projects	B3 B5 B8 C2 C7 C8	4	26	30
Mixed objective/subjective test	B2	2	2	4
Personalized attention		5	0	5
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Guest lecture / keynote speech	Oral presentation complemented with the use of audiovisual media and the introduction of some questions aimed at students, in order to transmit knowledge and facilitate learning
Supervised projects	Supervised learning process aimed at helping students to work independently in a range of contexts (academic and professional). Focused primarily on learning ?how to do things? and on encouraging students to become responsible for their own learning.
Mixed objective/subjective test	Written test used for the assessment of learning, whose distinctive feature is the ability to determine whether or not the answers given are correct. It is a rigorously developed measuring instrument that allows to assess knowledge, abilities, skills, performance, aptitudes, attitudes, etc.

Personalized attention	
Methodologies	Description
Guest lecture / keynote speech Supervised projects	Students will be able to solve their doubts through personalized tutorials. To contact the teaching staff, they may use email or Teams.

Assessment			
Methodologies	Competencies / Results	Description	**Qualification**
Supervised projects	B3 B5 B8 C2 C7 C8	Group coursework: a research paper on a given topic for which a model can be given to the students to make use of	40
Mixed objective/subjective test	B2	The evaluation of the subject will be carried out through an exam where the knowledge acquired by the student during the course will be assessed.	60

Assessment comments
General EMJMD Sustainable Ship and Shipping SEAS 4.0 evaluation rules: - Students will have only two oportunities to pass a course. If failing to do so, they may be forced to leave the degree. - No part time or lecture attendance exemption are allowed in this degree.

Sources of information	
Basic	- Stopford (2006). Maritime economics 3 edition. - Aronietis Raimonds, Sys Christa, van Hassel Edwin, Vanelslander Thierry (2017). Investigating the bunkering choice determinants: the case of the port of Antwerp. Journal of shipping and trade - Aronietis Raimonds, Sys Christa, van Hassel Edwin, Vanelslander Thierry (2016). Forecasting port-level demand for LNG as a ship fuel : the case of the port of Antwerp . Journal of shipping and trade - van Hassel Edwin, Meersman Hilde, Van de Voorde Eddy, Vanelslander Thierry (2016). Impact of scale increase of container ships on the generalised chain cost. Maritime policy and management - van Hassel Edwin, Meersman Hilde, Van de Voorde Eddy, Vanelslander Thierry (2016). North-South container port competition in Europe : the effect of changing environmental policy. Research in transportation business & management - Stevens Laurence, Sys Christa, Vanelslander Thierry, van Hassel Edwin (2015). Research in transportation business & management. - van Hassel Edwin (2017). The implementation and evaluation of the energy efficiency design index (EEDI) : the future emission mitigation of three main shipping segments: C/WP6(2017)9. Paris. Organisation for Economic Co-operation and Development - van Hassel Edwin, Vanelslander Thierry, Neyens Kris, Vandeborre Hans, Kindt Dominique, Kellens Stefa (2021). Reconsidering nearshoring to avoid global crisis impacts : application and calculation of the total cost of ownership for specific scenarios. Research in transportation economics - van Hassel Edwin, Meersman Hilde, Van de Voorde Eddy, Vanelslander Thierry (2020). Impact of investing in new port capacity from a shipper and a shipowner perspective : the case of maasvlakte II. In Case studies on transport policy - Oganesian Virzhiniia, van Hassel Edwin, Sys Christa, Vanelslander Thierry (2020). Container barge (un)reliability in seaports : a company case study at the port of Antwerp. International journal of shipping and transport logistics - Meersman Hilde, Sutalo Nicolas, Van de Voorde Eddy, van Hassel Edwin, Vanelslander Thierry (2020). Belt and road : more competition between sea and rail? A generalized cost approach in Freight transport modeling in emerging countries. Kourounioti, Ioanna - Mohseni Seyed Abolfazl, van Hassel Edwin, Sys Christa, Vanelslander Thierry (2019). Economic evaluation of alternative technologies to mitigate sulphur emissions in maritime container transport from both the vessel owner and shipper perspective. In Journal of Shipping and Trade
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Other comments

To help in achieving a sustainable environment and to get the objective of number 5 action of the "Ferrol Green Campus Action Plan" (Healthy and environmentaly and socially sustainable research and teaching):The assignments to be done in this course:- Will be required in digital format.- Will be delivered using Moodle, with no need to print them.In case it is necessary to print them:- Plastics won´t be used.- Two side printing will be used.- Recycled paper will be used.- Printing drafts will be avoided.A sustainable use of the resources should be done, together with the prevention of negative impacts on the environment.