

## COURSE OUTLINE

### (1) GENERAL

<b>SCHOOL</b>	OF BUSINESS STUDIES		
<b>ACADEMIC UNIT</b>	SHIPPING, TRADE AND TRANSPORT DEPARTMENT		
<b>LEVEL OF STUDIES</b>	MSc		
<b>COURSE CODE</b>		<b>SEMESTER</b>	<b>B</b>
<b>COURSE TITLE</b>	Maritime Technology		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
LECTURES		3	3.5
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	GENERAL BACKGROUND - COMPULSORY		
<b>PREREQUISITE COURSES:</b>	N/A		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	GREEK- with English terms		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes		
<b>COURSE WEBSITE (URL)</b>			

### (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b></p> <p><i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> <li>• <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i></li> <li>• <i>Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i></li> <li>• <i>Guidelines for writing Learning Outcomes</i></li> </ul>
<p>The Marine Technology course analyzes techno-economic data on ship types and the corresponding parameters affecting the management and economic exploitation of ships.</p> <p>It aims to bring the students into contact with the shipping environment of the ship's operation and management and to familiarize them with the basic elements of the structure of the ship, the types of ships, the operational and construction specificities of the ships. The course emphasizes the fundamental concepts of shipping, the technology applied on them, the machinery and systems installed on them according to the ship type, the cargo they carry, as well as the practical application of the existing technologies.</p> <p>The modules related, but not limited to: structure, to ship terminology, input-output analysis of their operation, the international maritime activity, as well the operating</p>

costs of ships.

The learning outcomes of the course are summarized in:

- Understanding of the basic principles of ship construction, as well as basic features and geometrical characteristics of ship
- The structure and terminology related to the ship as well the stability of ships
- Financial and engineering features of ship management
- Implementation of best practices in the operation of the ship and relationship with the shipping company
- Propulsion & Basic Machineries
- The ship's operational cost and calculations of basic costs in relation to the type of ships

#### General Competences

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?*

*Search for, analysis and synthesis of data and information, with the use of the necessary technology*

*Adapting to new situations*

*Decision-making*

*Working independently*

*Team work*

*Working in an international environment*

*Working in an interdisciplinary environment*

*Production of new research ideas*

*Project planning and management*

*Respect for difference and multiculturalism*

*Respect for the natural environment*

*Showing social, professional and ethical responsibility and sensitivity to gender issues*

*Criticism and self-criticism*

*Production of free, creative and inductive thinking*

*.....*

*Others...*

*.....*

- Search, analyze and synthesize data and information, using the necessary technologies
- Adapt to new situations
- Decision making
- Autonomous work
- Teamwork
- Working in an international environment
- Working in an interdisciplinary environment
- Production of new research ideas.

### (3) SYLLABUS

The content of the course develops the basic principles of ship structure, operation and management at a theoretical and applied level. In this context, the course aims to develop students' knowledge and skills to:

1. Understand the basic techno-economic differences of the basic types of ships
2. Be able to assess the parameters specific to commercial ship management.
3. To enhance the level of perception of learners on issues they examine and describe the complexity of the techno-economic parameters existing in the shipping sector

Learning outcomes sought

1. To acquire basic knowledge of the specificities of ships as their transport systems, their operation and their functionality.

The content of the course includes:

- Fundamental Principles and basic traits as well as geometric characteristics of ships
- Structure and terminology related to the ship
- Propulsion & basic Engine Machinery
- Operating cost of the ship and calculating basic costs in relation to the type of ships
- Ship management and assessment
- Modern technological, operational and management systems
- Green shipping and ship technologies
- Maritime industry and new technologies
- Green technologies in ship's operation
- Case studies

#### (4) TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Face-to-face, physical presence in class and implementation of e-class platform	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of ICT in teaching, laboratory education, communication with students, based on synchronous and interactive technologies	
<b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.  The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i>	<b>Activity</b>	<b>Semester workload</b>
	Lectures	19 hours
	Seminars	hours
	Case Studies	hours
	Course preparation	hours
	educational visits, project study,	hours
	Meetings to resolve questions	hours
	Exams	2 hours
	Course total	21 hours
<b>STUDENT PERFORMANCE EVALUATION</b> <i>Description of the evaluation procedure  Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public</i>	Student evaluation procedures and final course grading are based on the weighted written exams 100%	
	Language of student evaluation: Greek with specialized terminology in English.	

*presentation, laboratory work, clinical examination of patient, art interpretation, other*

*Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*

## (5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Notes of instructor

- Auxiliary machinery for ships, Eugenides Foundation, 2015.

- Marine engines Eugenides Foundation, 2022.

- Related bibliography:

- *The Maritime Engineering Reference Book: A Guide to Ship Design, Construction and Operation, 1st Edition, Anthony F. Molland, Elsevier Science, 2008*
- *Marine auxiliary machinery, 7th. Edition, H D McGeorge, Butterworth-Heinemann Elsevier 2007*
- *Pounder's Marine Diesel Engines and Gas Turbines, 10th Edition, Malcolm Latarche, Butterworth-Heinemann, 2009*
- *Introduction to Marine Engineering, Revised 2nd Edition 2nd Revised Edition, D. A. Taylor, Butterworth-Heinemann, 1996*
- *Internal Combustion Engine Fundamentals 2E 2nd Edition, John Heywood, McGraw-Hill Education, 2018*
- *General Engineering Knowledge (Marine Engineering), H.D McGeorge, Routledge, 2015*
- *Marine Steam Boilers, 4th Edition, James H. Milton and Roy M. Leach, Elsevier Science, 2013*
- *Marine Boilers, 3rd Edition, G. T. H. Flanagan, Elsevier Science, 2013*
- *Marine Electrical Equipment and Practice, H.D McGeorge, Butterworth-Heinemann, 1993*
- *Practical Marine Electrical Knowledge, Dennis T. Hall, Witherby Seamanship International, 1999*
- *Pump Handbook, 4th Edition, Igor J. Karassik, Joseph P. Messina, Paul Cooper, Charles C. Heald McGraw Hill Professional, 2007*
- *Ship Construction, David J. Eyres, Butterworth-Heinemann, 2007*
- *Αντλίες, Ι. Δάγκινης, Α. Γλύκας, εκδόσεις Ευγενίδειο Ιδρυμα, 2016*