

## COURSE OUTLINE

### (1) GENERAL

SCHOOL	OF BUSINESS		
ACADEMIC UNIT	DEPARTMENT OF SHIPPING, TRADE AND TRANSPORT		
LEVEL OF STUDIES	POSTGRADUATE (MSc) “MBA in Shipping”		
COURSE CODE	12051-12	SEMESTER	2 <sup>nd</sup> Semester (Spring)
COURSE TITLE	OPERATIONS IN PORTS AND TERMINALS		
INDEPENDENT TEACHING ACTIVITIES <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>	WEEKLY TEACHING HOURS	CREDITS	
	3	4	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	SPECIAL BACKGROUND: No  ELECTIVE - Managerial Mathematics - Economics		
PREREQUISITE COURSES:	NONE		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	ENGLISH		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)	<a href="https://www.stt.aegean.gr/mba-in-shipping/programma-mathimaton/">https://www.stt.aegean.gr/mba-in-shipping/programma-mathimaton/</a>		

### (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b>  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.</p> <p>Consult Appendix A</p> <ul style="list-style-type: none"> <li>• Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</li> <li>• Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</li> <li>• Guidelines for writing Learning Outcomes</li> </ul>
<p>At the end of lectures students should be able:</p> <ul style="list-style-type: none"> <li>• Have a good understanding of the overall port terminals’ system</li> <li>• Identify opportunities for improving the technical efficiency of a particular port terminal into the market of terminal services</li> <li>• Have the ability to model systems of terminals (macroscopic scale) or particular terminals (microscopic scale), leveraging data and methods</li> <li>• To structure and formulate relevant mathematical optimization problems for addressing problems that emerge in planning and managing port terminals</li> </ul>
<p><b>General Competences</b></p>

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	Project planning and management
Adapting to new situations	Respect for difference and multiculturalism
Decision-making	Respect for the natural environment
Working independently	Showing social, professional and ethical responsibility and sensitivity to gender issues
Team work	Criticism and self-criticism
Working in an international environment	Production of free, creative and inductive thinking
Working in an interdisciplinary environment	.....
Production of new research ideas	Others...
	.....

The course aims at understanding and providing in-depth knowledge for analysing, planning and evaluating the performance of “door-to-door” transport chains and logistics networks through an integrated approach. The course investigates the driving forces of transport systems’ organisation; it considers all transport modes and adopts an inter-disciplinary approach for the analysis of the transport market structure on the one hand and the decision-making procedures for modal choice and transport flow organisation on the other. The course particularly focuses on the maritime leg of intermodal logistics chains and maritime logistics at various levels. The course deals with various components of a transport system, such as infrastructure, transport means, transport and logistics operations. It combines methodological tools related to transport economics, demand modelling, strategic and operational logistics, transport policy, based on both quantitative methods and qualitative approaches.

### (3) SYLLABUS

#### **Introductory unit**

- Definitions
- In-depth analysis of the market for port services.
- Actors involved
- Descriptive analysis of a typical port terminal

#### **Systems of Terminal**

- Types of markets and economies that emerge in the port industry and their effect on the analytical approaches involved
- Methodologies, models and strategies for each type of market
- Port services pricing optimization

#### **Analysis of a single terminal**

- A systems-based approach for modeling port terminals
- Components of the terminals and modelling approaches for each of them
- Types of optimization models useful for analyzing terminals
- The elements of cost and benefit in terminal organization

#### **Particular Case-studies in port terminal optimization**

- Berth and Gantry-cranes Allocation Problem
- Yard Planning
- Ship/Stowage Planning
- Gate planning and management

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

<p><b>DELIVERY</b>  <i>Face-to-face, Distance learning, etc.</i></p>	Lectures, Seminars, Round tables.	
<p><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>  <i>Use of ICT in teaching, laboratory education, communication with students</i></p>	YES	
<p><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></p>	<p><i>Activity</i></p>	<p><i>Semester workload</i></p>
	Lectures	20
	Study and analysis of bibliography	60
	Analysis of case-studies	40
Course total	120	
<p><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 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.</i></p>	<ul style="list-style-type: none"> <li>• Course Project 100% or</li> <li>• Final exam 100%</li> </ul>	

**(5) ATTACHED BIBLIOGRAPHY**

<p>- Suggested bibliography:</p> <p>- Related academic journals:</p> <p>Course bibliography consisting in a big number of scientific articles, policy documents, reports and other supporting documents</p>
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