COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF BUSINESS		
ACADEMIC UNIT	DEPARTMENT OF SHIPPING, TRADE AND TRANSPORT		
LEVEL OF STUDIES	POSTGRADUATE (MSc) "MBA in Shipping"		
COURSE CODE	**12051-15**	**SEMESTER**	**2nd Semester (Spring)**
COURSE TITLE	**COMMODITY TRADE FLOWS - FREIGHT DEMAND MODELLING**		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	3	4
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).		

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Specialised general knowledge ELECTIVE
PREREQUISITE COURSES:	-
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	*English*
IS THE COURSE OFFERED TO ERASMUS STUDENTS	*Yes*
COURSE WEBSITE (URL)	https://www.stt.aegean.gr/mba-in-shipping/programma-mathimaton/

(2) LEARNING OUTCOMES

Learning outcomes
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.

Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*
- *Guidelines for writing Learning Outcomes*

After successfully completing this course, the students will be able to:
The course aims to develop a clear understanding of the role and operation of freight transportation and provide knowledge about models, systems' analysis and solutions' design related to the servicing of goods' flows from the production to the consumption point.

The course is designed to develop scientists and professionals to deepen their knowledge and experience in designing efficient freight transportation systems and logistics through updated models and good international practices, to enhance the possibility of employment both in organizations and companies in the transport industry as well as in research / academic institutions and to empower them to achieve both the objectives of their employment entity but also to enhance their own scientific development and professional career.
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?*
Main focus is the provision of scientific knowledge and experience on issues concerning: • Data requirements for freight demand modeling and simulation • Commodity flow modeling • Mode choice – Discrete choice modeling • Freight route choice behaviour - Intermodal routing • Scenarios' analysis • Smart solutions and new modes of transport • The critical assessment of the systems' performance and the facilitation of innovative models for freight demand.

(3) SYLLABUS

Theoretical concepts are linked with practical, real case examples, and when applicable, case exercises are part of course material.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face to face and distance synchronous transmission of lectures
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	• Lectures using computer presentations and video
TEACHING METHODS *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*	

Activity	*Semester workload*
Lectures	18
Study and analysis of bibliography	68
Analysis of case-studies	34
Course total	120

as the hours of non-directed study according to the principles of the ECTS	
STUDENT PERFORMANCE EVALUATION *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.*	Language of the evaluation: English • Assignments: 40% • Research project report: 60%

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

- Tavasszy, L., de Jong, G. 2014. Modelling Freight Transport. ISBN: 978-0-12-410400-6. Elsevier Inc.
- Ben-Akiva, M., Meersman, H., Van de Voorde, E. 2013. Freight Transport Modelling. ISBN: 978-1-78190-285-1. Emerald Group Publishing Limited.
- Polydoropoulou Amalia, Tsirimpa Athena, Karakikes Ioannis, Tsouros Ioannis, Pagoni Ioanna, 2022. "Mode Choice Modeling for Sustainable Last-Mile Delivery: The Greek Perspective". Sustainability. 14(15):8976. https://doi.org/10.3390/su14158976
- Kourounioti, I., Tsouros, I., Georgakis, P., Salas, A., de Bok, M., Tsirimpa, A., Pagoni, I., Thoen, S., Eggers, L., Polydoropoulou, A., Tavasszy, L. (2021). Matching supply and demand in crowdshipping: A theoretical framework. Paper 21-xxxxx, 100th Annual Meeting of TRB, Washington, D.C.
- de Bok, M., Tavasszy, L., Kourounioti, I., Thoen, S., Eggers, L., Nielsen, V., Strong, I. (2021). Application of the HARMONY Tactical Freight Simulator to a Case Study for Zero Emission Zones in Rotterdam. Paper 21-02289, 100th Annual Meeting of TRB, Washington, D.C. (Best Research Paper Award)