COURSE OUTLINE

(1) General information

FACULTY/SCHOOL	INDUSTRIAL AND MARITIME STUDIES		
DEPARTMENT	MARITIME STUDIES		
LEVEL OF STUDY	Undergraduate		
COURSE UNIT CODE	ΝΑΑΓΓ47	**SEMESTER**	Spring Semester Elective
COURSE TITLE	Transportation Management and Operations		

INDEPENDENT TEACHING ACTIVITIES *in case credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the entire course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	4	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4		

COURSE TYPE *Background knowledge, Scientific expertise, General Knowledge, Skills Development*	General Knowledge
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION:	English
LANGUAGE OF EXAMINATION/ASSESSMENT:	
THE COURSE IS OFFERED TO ERASMUS STUDENTS	YES
COURSE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail.

It is necessary to consult:

APPENDIX A

- *Description of the level of learning outcomes for each level of study, in accordance with the European Higher Education Qualifications' Framework.*
- *Descriptive indicators for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and*

APPENDIX B

- *Guidelines for writing Learning Outcomes*

In this course we intend to examine the state of the art in green transportation logistics, management and operations from the perspective of balancing environmental performance in the transportation supply chain while also satisfying traditional economic performance criteria. Part of the suggested bibliography is drawn from the recently completed European Union project Super Green, a three-year project intended to promote the development of European freight corridors in an environmentally friendly manner.

Individual chapters examine the policy context; the basics of transportation emissions; Green Corridors basics; the concept of TEN-T (Trans-European Network); Benchmarking of green corridors; the potential role of ICT (Information and Communication Technologies); Green vehicle routing; Reducing maritime CO_2 emissions via market based measures and speed and route optimization; Sulphur emissions; Lifecycle emissions; Green rail transportation; Green air transportation; Green inland navigation; and possible areas for further research.

Throughout, the course pursues the goal of "win-win" solutions and analyzes the phenomenon of "push-down, pop-up", wherein a change in one aspect of a problem can cause another troubling aspect to arise. For example, speed reduction in maritime transportation can reduce emissions and fuel costs, but could require additional ships and could raise in-transit inventory costs. Or, regulations to reduce sulphur emissions may ultimately increase CO_2 elsewhere in the supply chain. The course takes stock at the various tradeoffs that are at stake in the goal of greening the supply chain and looks at where balances can be struck.

General Competences

Taking into consideration the general competences that students/graduates must acquire (as those are described in the Diploma Supplement and are mentioned below), at which of the following does the course attendance aim?

Search for, analysis and synthesis of data and information by the use of appropriate technologies,
Adapting to new situations
Decision-making
Individual/Independent work
Group/Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for diversity and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical thinking
Development of free, creative and inductive thinking
……
(Other…….citizenship, spiritual freedom, social awareness, altruism etc.)
…….

- Project management
- Quality management
- Respect for diversity and multiculturalism
- Respect for the natural environment
- Demonstrate social, professional and moral responsibility and sensitivity to gender issues
- Exercise of criticism and self-criticism
- Promote free, creative and inductive thinking
- Making decisions
- Autonomous work
- Teamwork
- Working in an international environment
- Work in an interdisciplinary environment
- Producing new research ideas

(3) COURSE CONTENT

The content of the course is divided into chapters:

The Policy Context
Transportation Emissions: Some Basics
Green Corridors Basics
Green Corridors and Network Design
Benchmarking the SuperGreen Corridors with Green Technologies
ICT in Green Freight Logistics
Green Vehicle Routing
Green Maritime Transportation: Market Based Measures
Green Maritime Transportation: Speed and Route Optimization
Being Green on Sulphur: Targets, Measures and Side-Effects
Critical Analysis of Air Emissions from Ships: Lifecycle Thinking and Results
Green Rail Transportation: Improving Rail Freight to Support Green Corridors
Emissions and Aviation: Towards Greener Air Transport
Emissions and Inland Navigation
Directions for Further Research
Back Matter

(4) TEACHING METHODS--ASSESSMENT

MODES OF DELIVERY *Face-to-face, in-class lecturing, distance teaching and distance*	Face-to-face

<table>
<tr><td>learning etc.</td><td></td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in teaching, Laboratory Education, Communication with students</td><td>▪ Support of the course through the e-class electronic platform
▪ Communication with students (email)
▪ Lectures through PowerPoint</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, Internship, Art Workshop, Interactive teaching, Educational visits, projects, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.</td><td><table>
<tr><th>Activity/Method</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>46</td></tr>
<tr><td>Case studies</td><td>10</td></tr>
<tr><td>Written project (team or individual)</td><td>29</td></tr>
<tr><td>Self-guided study</td><td>40</td></tr>
<tr><td>Total</td><td>125</td></tr>
</table></td></tr>
<tr><td>STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS
Detailed description of the evaluation procedures:

Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice tests, short- answer questions, open-ended questions, problem solving, written work, essay/report, oral exam, presentation, laboratory work, other……etc.

Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.</td><td>1. Written final examination (60%) in Greek which includes Constructed Response Questions and / or Multiple-Choice Questions

2. Individual (or team) written project (40%)</td></tr>
</table>

(5) SUGGESTED BIBLIOGRAPHY:

Suggested bibliography: Green Transportation Logistics [electronic resource] Έκδοση: /2016 Συγγραφείς: Harilaos N. PsaraftisISBN: 9783319171753Τύπος: Ηλεκτρονικό ΒιβλίοΔιαθέτης (Εκδότης): HEAL-Link Springer ebooks