

COURSE OUTLINE

(1) General information

FACULTY/SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	MARITIME STUDIES		
LEVEL OF STUDY	UNDERGRADUATE		
COURSE UNIT CODE	NAAIT25		
COURSE TITLE	Decision Making in Maritime Operations		
INSTRUCTOR'S NAME	Associate Professor Ioannis Lagoudis		
INDEPENDENT TEACHING ACTIVITIES <i>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</i>	WEEKLY TEACHING HOURS	CREDITS	
	4	6	
<i>Add rows if necessary. The organization of teaching and the teaching methods used are described in detail under section 4</i>			
COURSE TYPE <i>Background knowledge, Scientific expertise, General Knowledge, Skills Development</i>	Background knowledge		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION:	English		
LANGUAGE OF EXAMINATION/ASSESSMENT:			
THE COURSE IS OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/NAS337/		

(2) LEARNING OUTCOMES

<p>Learning Outcomes <i>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:</i></p> <p>APPENDIX A</p> <ul style="list-style-type: none"> • 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 <p>APPENDIX B</p> <ul style="list-style-type: none"> • Guidelines for writing Learning Outcomes

The purpose of the module is to familiarize participants with key decision-making tools such as descriptive statistics, regression analysis, probabilities and simulation. These tools are the basis for any decision process in the modern maritime business environment.

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?

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

Upon the completion of the module students will be able to:

- Collect and analyse data
- Use different methodologies and tools for analysing data
- Make swift decisions related to the maritime industry

(3) COURSE CONTENT

Week	Topic
1.	<ul style="list-style-type: none"> • Module Introduction • Introduction to Statistics: Data Visualization
2.	<ul style="list-style-type: none"> • Summary Measures • Sampling Methods
3.	<ul style="list-style-type: none"> • Sampling Distributions • Discrete Probabilities
4.	<ul style="list-style-type: none"> • Advanced concepts on Discrete Probabilities • Continuous Probabilities
5.	<ul style="list-style-type: none"> • Applications on Probabilities • Introduction to Decision Trees
6.	<ul style="list-style-type: none"> • Decision Tree Applications with uncertainty I • Decision Tree Applications with uncertainty II
7.	<ul style="list-style-type: none"> • Estimation of Confidence Interval • Hypothesis Testing
8.	<ul style="list-style-type: none"> • Introduction to Regression Analysis • Advanced concepts on Regression Analysis
9.	<ul style="list-style-type: none"> • Time Series Analysis • Forecasting
10.	<ul style="list-style-type: none"> • Optimization modeling I • Optimization modeling II
11.	<ul style="list-style-type: none"> • Applications on Optimization modeling I • Applications on Optimization modeling II

12.	<ul style="list-style-type: none"> • Introduction to Simulation • Applications with Simulation modeling
13.	<ul style="list-style-type: none"> • Recap

(4) TEACHING METHODS--ASSESSMENT

<p style="text-align: center;">MODES OF DELIVERY</p> <p><i>Face-to-face, in-class lecturing, distance teaching and distance learning etc.</i></p>	In-class lecturing													
<p style="text-align: center;">USE OF INFORMATION AND COMMUNICATION TECHNOLOGY</p> <p><i>Use of ICT in teaching, Laboratory Education, Communication with students</i></p>	E-CLASS													
<p style="text-align: center;">COURSE DESIGN</p> <p><i>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.</i></p> <p><i>The study hours for each learning activity as well as the hours of self-directed study are given following the principles of the ECTS.</i></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><i>Activity/Method</i></th> <th style="text-align: right;"><i>Semester workload</i></th> </tr> </thead> <tbody> <tr> <td>LECTURES</td> <td style="text-align: right;">52</td> </tr> <tr> <td>PROJECT</td> <td style="text-align: right;">60</td> </tr> <tr> <td>STUDY</td> <td style="text-align: right;">38</td> </tr> <tr> <td>Total</td> <td style="text-align: right;">150</td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	<i>Activity/Method</i>	<i>Semester workload</i>	LECTURES	52	PROJECT	60	STUDY	38	Total	150			
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<p style="text-align: center;">STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS</p> <p><i>Detailed description of the evaluation procedures:</i></p> <p><i>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.</i></p> <p><i>Specifically defined evaluation criteria are stated, as well as if and where they are accessible by the students.</i></p>	100% Assignment													

(5) SUGGESTED BIBLIOGRAPHY:

-Suggested bibliography:

- Cynthia Fraser Business Statistics for Competitive Advantage with Excel 2016

Additional readers for course is:

- S. Christian Albright, Wayne Winston and Christopher Zappe. Data Analysis and Decision Making, OH: South-Western, Cengage learning, 2011. 4th Edition. ISBN: 9780538476126.
- Dennis Wackerly, William Mendenhall, Richard L. Scheaffer. Mathematical Statistics with Applications. Belmont CA: Thomson Higher Education, 2008. 7th Edition. ISBN: 9780495385080.
- Ronald E. Walpole, Raymond H. Myers, Sharon L. Myers, Keying Ye. Probability & Statistics for Engineers & Scientists, Upper Saddle River NJ: Pearson Prentice Hall, 2007. 8th Edition. ISBN: 0132047675.
- Richard L. Scheffer, Madhuri S. Mulekar, James T. McClave. Probability & Statistics for Engineers & Scientists, Boston MA: Cengage learning, 2011. 5th Edition. ISBN: 9780534403027.
- John A. Rice. Statistics and Data Analysis. Belmont, CA: Thomson Higher Education, 2007. ISBN 0534399428