University of Piraeus

Course Outlines

MSc in Logistics

1.1 Semester A'

1.1.1 Mandatory Courses

1.1.1.1 Analytical Methods

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ANM101	**SEMESTER OF STUDY**	1st
COURSE TITLE	Analytical Methods		
INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHING HOURS**	**CREDITS**
		3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.			
COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized general knowledge		
PREREQUISITE COURSES:	No prerequisites required. Some knowledge of basic mathematics required.		
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes		
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.* • *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B* • *Guidelines for writing Learning Outcomes*
At the core of the course lies decision making in Logistics through quantitative models and techniques. The issues discussed in the course arise at strategic, tactical and operational level. A variety of models as well as solution techniques are presented. Special emphasis is given in Mathematical Programming Models – Linear and Integer, Network, and Queuing Theory models. Upon successful completion of the course, the students will be able to: • They have knowledge and will understand the problems related to the decision-making process

- Formulate a problem from the fields of Management and Decision making science and Logistics using mathematical models, identify its variables, the optimization objective and the restrictions to which the variables are subject to.
- Be able to make use of the appropriate models to use in each case, depending on the problem, data and existing constraints.
- To use basic available computer tools in solving optimization problems with Operations Research tools.
- Interpret the results/solution of mathematical models, make decisions and analyze alternative scenarios – using sensitivity analysis.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Independent work
- Teamwork
- Decision-making
- Development of free, creative and inductive thinking
- Search for analysis and synthesis of data and information employing technologies that are relevant according to the case
- Introduction of innovative research
- Project planning and management
- Optimization results interpretation
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism
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3. COURSE CONTENT

The course covers the following sections:

- Introduction
- Basic Models for Resource Allocation
- Complex Decision-Making Models
- Basic Network Models
- Queueing Systems

A combination of teaching and learning methods will be used to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises. Students will also do individual work.

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at e-class platform.

4. TEACHING METHODS - ASSESSMENT

<table>
<tr><td>TEACHING MODE
Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</td><td>Face-to-face and online lectures (Greek and English).

The course material will be presented in the form of three-hour presentations and will include lectures, seminars, case studies and problem solving using commercial software packages. Students will undertake in groups or individually the study of scientific articles/exercises that refer to quantitative techniques and models from management science as they appear in the area of Logistics internationally.</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the e-class platform.
Laboratory Education: Use of open access and in-house software for laboratory exercises.
Communication with students: Face-to-face during office hours, email, e-class platform.</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Project</td><td>50</td></tr>
<tr><td>Self-study of lecture material</td><td>60</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>7</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: The course material is posted on e-class during the semester. The final grade of the course is determined as follows:
• by 10% of the students' active participation in the course
• by 10-20% from exercises which are assigned during the semester according to the progress of the lectures and delivered by the students on predetermined dates.
• by 70-80% of the final written exam

The written exam involves solving problems/exercises and is conducted with closed books.

The assignment topic and evaluation criteria are posted on e-class at the beginning of the semester. Each assignment requires research and study of contemporary literature and quantitative models, writing a text of 3000-5000 words (in total) and a 15-minute presentation.</td></tr>
</table>

	In case of failure, students can participate in the repeat examination period in September. The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department of Industrial Management & Technology. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or e-class platform. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Ι. Καρκαζή: "Ειδικά Θέματα Επιχειρησιακής Έρευνας", Εκδόσεις Σταμούλης, Αθήνα-Πειραιάς, 1997
- Π. Μηλιώτη: "Επιχειρησιακή Έρευνα – Μέθοδοι και Προβλήματα", Εκδόσεις Σταμούλης, Αθήνα-Πειραιάς, 1994
- Hillier F.S. , Lieberman G.J. (2015), "Introduction to Operations Research", McGrawHill, ISBN 978-0-07-352345-3
- Chen X., Simchi-Levi D. and Bramel J. (2014), "The Logic of Logistics:Theory, algorithms and applications for logistics management", Springer Series in Operations Research, Springer, ISBN 978-1-4614-9148-4
- Williams H.P. (1993), "Model Building in Mathematical Programming", John Wiley & Sons; ISBN: 0-471-94111-5

-Journals:

- European Journal of Operational Research
- International Journal of Production Research (IJPR)
- International Journal of Production Economics
- Transportation Research Part E: Logistics and Transportation Review
- International Journal of Physical Distribution and Logistics Management

-Lecture notes

Lecturer's notes/slides will be uploaded on the e-class platform to enable students access them for their academic work.

1.1.1.2 Supply Chain Management

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΔΕΑ111	**SEMESTER OF STUDY**	A'
COURSE TITLE	SUPPLY CHAIN MANAGEMENT		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g., in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	GENERAL BACKGROUND
PREREQUISITE COURSES:	ECONOMIC THEORY, BUSINESS ADMINISTRATION, STATISTICS
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT150/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to obtain skills and up-to-date knowledge on basic areas pertaining to supply chain management. Upon successful completion of the course, the students will be able to:

- be familiar with basic concepts of logistics
- understand the significant impact of supply chain management on financial performance and viability of an enterprise.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Decision-making
- Independent work
- Team work
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking.
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

- Introduction to the Supply Chain Management
- Risk Management in the Supply Chain
- Outsourcing
- Forecasting Supply Chain Requirements
- Evaluation of Financial Needs
- Supply Chain Finance
- Impact of Supply Chain Management on Financial Performance of an Enterprise.

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises. Students will also do group work.

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English). In-class lecturing. During the lectures, course participants are encouraged to participate in order to increase the level of understanding of the subjects being taught. Following the completion of the thematic unit, a case study is distributed in order to strengthen the understanding of the material and in order for participants to practice in solving real life problems. Between course sessions, participants are required to study in-depth the thematic unit that has been taught using international bibliography articles and the corresponding chapters of the basic manuals.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform. **Communication with students:** Face-to-face at office hours, email, eclass.

COURSE DESIGN

Description of teaching techniques, practices and methods:

Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS

Activity / Method	*Semester Workload*
Lectures	30
Study and analysis of bibliography	30
Project	60
Self-study of lecture material	25
Exams (written)	3
Counselling	2
Course Total	***150***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS

Detailed description of the evaluation procedures:

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

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.

Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at eclass during the semester. The final grade of the course is as follows:

- 30% of the final grade from the quality and the presentation of the team project
- 70% of the final grade will result from the score on a final example where participants will be asked to complete a test covering the whole of the taught course content, constituted of multiple-choice questions.

Project topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 3-5 students. Each assignment requires research and study of up-to-date literature, writing a text of 3000-5000 words (in total) and a 15-minute presentation.

In case of failure, the student can participate in the examination period of September.

The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.

Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- **Bowersox, D.J., Closs, D.J. and Cooper, M.B.** (2019) *Supply Chain Logistics Management.* 5th Edition, McGraw-Hill.
- **Christopher, M.** (2016) *Logistics and Supply Chain Management.* 5th Edition, FT Publishing International.
- **Godsmark, J., and Richards, G.** (2019) The *Logistics Outsourcing Handbook: A Step-by-Step Guide from Strategy Through to Implementation.* 1st Edition, Kogan Page.
- **Langley, C.J., Novack, R.A., Gibson, B., and Coyle, J.J.** (2020) *Supply Chain Management: A Logistics Perspective.* 11th Edition, Cengage Learning.

-Journals:

- International Journal of Logistics

- International Journal of Logistics Management
- International Journal of Physical Distribution and Logistics Management
- Journal of Business Logistics
- Journal of Supply Chain Management, The
- Supply Chain Management: An International Journal

-Lecture Notes

- PowerPoint Transparencies

1.1.1.3 Logistics Information Systems

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΠΣL100	**SEMESTER OF STUDY**	1st
COURSE TITLE	LOGISTICS INFORMATION SYSTEMS		
INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHING HOURS**	**CREDITS**
		3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.			
COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized general knowledge		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes		
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT211/		

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The application of Information Systems (IS) is wide and varied. This course focuses on their application as a mechanism to support business management and decision-making, as well as the use of IS in the majority of business areas. The use of modern IT tools and techniques and the implementation of the latest trends in the field of the Supply Chain lead to significant improvements in the operation of a business and contribute to the drastic reduction of Logistics costs, which constitute a significant percentage of the value of a final product.

After attending the course, students will acquire knowledge in the management of modern e-business and Logistics Information Systems.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Adapting to new situations
- Decision-making
- Independent work
- Working in an interdisciplinary environment
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

3. COURSE CONTENT

The course covers the following

Week	Course Topic
1-2	Introduction – Course Overview
3	Databases, interface, design and analysis of IS
4-5	IS Development – Decision Support Systems – Expert Systems
6-7	ERP Systems
8	Deisgn of Logistics IS
9	Warehouse Management Systems
10	E-business & E-logistics

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English). In-class lecturing, laboratory training in the design and analysis of Logistics IS.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform. **Laboratory Education:** Use of open access software for laboratory exercises Communication with students: Face-to-face at office hours, email, eclass
COURSE DESIGN *Description of teaching techniques, practices and methods:* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.* *The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS*	*Activity / Method* — *Semester Workload* Lectures — 30 Laboratory exercise — 15 Self-study of lecture material — 104 Counselling — 1 Course Total — *150*
STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:*	Language of exams: Greek & English in Erasmus classes Assessment Methods: The final grade of the course is as follows: • Final exam → 90%

Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	• Class participation during laboratory exercises → 10% In case of failure, in the September re-sits, the grade of the course is formed based on the above scale. The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly. Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

Selected studies from the following scientific journals

- Management Science
- International Journal of Information Systems and Supply Chain Management
- European Journal of Operational Research
- International Journal of Information Management
- Journal of Strategic Information Systems
- Information Sciences

-Lecture notes

-Workshop material

1.1.2 Elective Courses (2/5)

1.1.2.1 Computational Tools for Problem Solving and Analysis

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-YEA107	**SEMESTER OF STUDY**	1st
COURSE TITLE	COMPUTATIONAL TOOLS FOR PROBLEM SOLVING AND ANALYSIS		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Special Background
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT151/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to study various computational tools and techniques which can be employed for modeling and analyzing unstructured business problems and decision-making issues. Spreadsheet software applications are used as the main analysis tool, due to their widespread use in the business environment as well due to the significant, often unexploited, capabilities for data analysis and processing that they provide. The tools presented cover a wide range of methods for quantitative analysis and decision analysis and are associated with the areas of Management Science, Applied Statistics and Decision Analysis.

Upon successful completion of the course, the students will be able to:

- develop models for exploratory analysis and study of practical business problems
- to apply sound scientific techniques in practical problem-solving and analysis, and
- efficiently use the corresponding spreadsheet software tools for performing the above in a time-efficient manner.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according to the case
- Adapting to new situations
- Decision-making
- Independent work
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

- Basic modeling principles and practices
- Basic spreadsheet engineering
- Optimization tools
- Data lookup and presentation
- Decision-Making and Analysis under uncertainty
- Simulation with spreadsheets
- Introduction to Macros and VBA Programming

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, practical application of presented methods in spreadsheet software, and analysis and discussion of homework assignments and examples. Students will also be assigned a semester exercise in analyzing an unstructured business problem and developing the corresponding model.

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	In-class lecturing, webinars Face-to-face and online lectures (Greek and English).
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform. **Laboratory Education:** Use of open access and in-house software for laboratory exercises **Communication with students:** Face-to-face at office hours, email, eclass

COURSE DESIGN

Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS

Activity / Method	*Semester Workload*
Lectures	30
Exercises	20
Semester Assignment	20
Self-study of lecture material	76.5
Exams (written)	3
Counselling	0.5
Course Total	***150***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS

Detailed description of the evaluation procedures:
Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.

Language of evaluation: Greek & English in Erasmus classes
Assessment Methods: Course material is posted at eclass during the semester. The final grade of the course is as follows:

- 20% from the participation of students in course activities,
- 60% from homework weekly and semester assignments, and
- 20% from the final exam.

The final examination takes place in the PC lab and includes problem solving exercises by the use of spreadsheet software. It is conducted with open books.
In case of failure, in the September re-sits, a repeat examination is conducted, and the grade of the course is formed as above.
The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.
Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Data Analysis and Decision Making, by S. C. Albright, W. L. Winston and C. J. Zappe, South-Western
- Business Modeling with Spreadsheets Problems, Principles, and Practice, by Thin-Yin Leong and Michelle L.F. Cheong, McGraw-Hill
- A Guide to Microsoft Excel 2013 for Scientists and Engineers, by Bernard Liengme, Elsevier
- Statistics and Probability for Engineering Applications, by W. J. Decoursey, Academic Press
- Management science: the art of modeling with spreadsheets, by Stephen G. Powell and K.R. Baker, John Wiley & Sons
- Practical Management Science, by W.L. Winston and S.C. Albright, South-Western

-Lecture notes

-Workshop material

1.1.2.2 Operations Cost Analysis

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	Δ-ΚΟΛ106	**SEMESTER OF STUDY**	
COURSE TITLE	OPERATIONS COST ANALYSIS		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is the acquisition of Knowledge and skills in the application of the modern methodology of Activity Based Costing (ABC) to the processes of a company. ABC was originally developed to solve the problem that many managers could perceive through their experience but could not demonstrate through traditional costing systems. Today, ABC systems are recognized as the most modern (state-of-the-art) cost control technique, finding application in a wide range of activities and businesses worldwide.

Upon successful completion of the course, the students will be able to:

- be familiar with the basic concepts of Activity Based Costing methodology.
- to know and operate a powerful and integrated decision support system which will be based on ABC method as it is applied with its principles.
- understand that the smooth operation, development and above all the profitability of the business depends on the acquisition and retention of satisfied customers and on the correct measurement and correct allocation of costs.
-

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the students should have acquired and that the course is aimed at are:

- Analysis and synthesis of data and information, to solve problems related to costing
- Decision making
- Independent work
- Project planning and management
- Ability to work autonomously as well as in a team with other business departments
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

- Traditional Costing Systems
- Basic principles Activity Based Costing (ABC)
- Benefits and requirements of ABC
- Segregation of fixed, variable, overhead, direct and indirect costs
- Process assignment to products and customers
- Activities Identification – Questionnaires
- Activities and Cost Objects
- Resource Assignment to activities
- Cost Drivers Identification
- Profit/Loss analysis per product or service per customer
- Results Interpretation – Management reports

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and study of real cases.

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English). In-class lecturing. The course will take the form of three-hour seminar lectures. Five (5) three-hour lectures will be devoted to the complete presentation and analysis of existing and applied study examples (case studies). Computer problem solving will accompany the lectures and there will be a presentation and demonstration by viewing the computer screen and guiding the costing model analysis process step by step. All course material will be distributed on CD.

<table>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform.
Communication with students: Face-to-face at office hours, email, eclass, skype and Microsoft teams</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Study and analysis of bibliography</td><td>52</td></tr>
<tr><td>Individual Work</td><td>4,5</td></tr>
<tr><td>Self-study of lecture material</td><td>60</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>0,5</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at eclass during the semester. The final grade of the course is as follows:
• 30% from student’s individual work - project
• 70% of the final grade will result from the score on a final written exam where participants will be asked to complete a test covering the whole of the taught course content, constituted of multiple-choice questions.
In case of failure, the student may participate in the September re-sits.
The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.

Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.</td></tr>
</table>

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- **Robert S. Kaplan, Steven R. Anderson**, 2007, *Time-Driven Activity-Based Costing*
- **Fisher, J. G., Krumwiede, K**., 2012, *Product costing systems: Finding the right approach*
- **Garrison, R.H., Noreen, E.W., and Brewer, P.C**., 2012*, Managerial accounting*
- **Gary Cokins,** 2001, *ACTIVITY-BASED COST MANAGEMENT an Executive’s Guide*
- **Κεχράς Ιωάννης**, 2009, *Η σύγχρονη κοστολόγηση κατά δραστηριότητα*
- **Γκάτσος Δημήτριος**, 2019, *Κοστολόγηση Βάσει Δραστηριοτήτων (ABC)*
- **Συγγελοπούλου Μαρία**, 2014, *Activity Based Costing*
- **Vlasios Giannakainas**, 2004, *Anatomy of Business Logistics*

- Lecture notes

1.1.2.3 Inventory Management

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	LOGEPA03	**SEMESTER OF STUDY**	1st
COURSE TITLE	INVENTORY MANAGEMENT		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Elective
PREREQUISITE COURSES:	Basic knowledge on Operations Management and Statistics/Operations Research
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT215/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to study inventory control models, both deterministic and stochastic, as well as the analysis of methods on how to minimize the inventory cost in a firm.

Upon successful completion of the course, the students will be able to manage efficiently and effectively their firm's stock by simultaneously reducing the inventory level and increasing the level of service to their customers.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Adapting to new situations
- Independent work
- Decision-making
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

Week	Topic
1	Introduction
2	Inventory Management – ABC Model
3	The basic EOQ model
4	Inventory models with independent demand
5	Deterministic Inventory models I
6	Deterministic Inventory models II
7	Stochastic Inventory models and safety stocks I
8	Stochastic Inventory models and safety stocks II
9	Single period inventory models
10	Case studies

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises.
In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at e-class.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	In-class lecturing. Face-to-face and online lectures (Greek and English).
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform. **Communication with students:** Face-to-face at office hours, email, e-class
COURSE DESIGN *Description of teaching techniques, practices and methods:* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.* *The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS*	

Activity / Method	***Semester Workload***
Lectures	30
Self-study of lecture material	116,5
Exams (written)	3
Counselling	0.5
Course Total	***150***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc* *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	**Language of exams:** Greek & English in Erasmus classes **Assessment Methods:** Course material is posted at e-class during the semester. The final grade of the course is 100% from written examination, which includes problem solving / exercises and it is conducted with open books. In case of failure, in the September re-sits, the grade of the course is formed again 100% from written examination. The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or e-class. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- J. Heizer, B. Render, C. Munson (2021). *Operations Management: Sustainability and Supply Chain Management,* Pearson.
- P.H. Zipkin (2000). *Foundations of Inventory Management.* McGraw-Hill.
- Κ.Π. Παππής (2017). *Προγραμματισμός Παραγωγής.* Εκδόσεις UNIBOOKS, Β' έκδοση.

-Journals:

- Management Science
- Journal of Operations Management
- Production and Operations Management
- European Journal of Operational Research
- International Journal of Production Economics
- International Journal of Production Research
- Production Planning and Control
- Journal of Cleaner Production

-Lecture notes

-Workshop material

1.1.2.4 ERP Systems for Supply Chain Management

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ERP100	**SEMESTER OF STUDY**	1st
COURSE TITLE	ERP SYSTEMS FOR SUPPLY CHAIN MANAGEMENT		
INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHING HOURS**	**CREDITS**
		3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.			
COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Skills development		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes		
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The course "ERP Systems in the Supply Chain – Applications with SAP" benefits of the main advantage of ERP systems, that is, business process integration. With this approach one achieves addressing issues pertinent to Logistics, as well as, teaching how business processes interact and exchange information to make decisions. The Business Processes which are presented and used during the Course are related to the corresponding SAP Module:

Business Process	Module
Sales	(SD) – Sales and Distribution
Production	(PP) – Production Planning and Control
Procurement	(MM) – Materials Management
Storage	(WM) – Warehouse Management
Financial Management	(FI/CO) – Financial Management / Controlling

In a nutshell, the aim of the course ""ERP Systems in the Supply Chain – Applications with SAP" is to provide to the students both the theoretical concepts and the practical skills in integrated ERP systems with emphasis in Logistics. More specifically, the course aims to demonstrate all the mechanisms which an ERP Systems offers, to support the business decision-making process along with the Logistics processes. Furthermore, students will come across with a variety of real - daily basis Project Management Process problems and difficulties, which should overcome using ERP's functionalities.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Adapting to new situations
- Decision-making
- Independent work
- Working in an interdisciplinary environment
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

3. COURSE CONTENT

The course ""ERP Systems in the Supply Chain – Applications with SAP" begins by presenting the theoretical background of ERP systems and familiarizes students with the Graphical User Interface of the SAP system. In the main part, students are taught the modeling of resources in the Supply Chain and the main functionality an ERP system offers to Logistics, by combining the theoretical background with the respective functional areas of the SAP system, to support procurement, sales, production, storage, and financial management. The course contains a broad spectrum of knowledge corresponding to complex business problems, covering the following subjects:

1. Theoretical background of ERP systems (functionality, architecture, implementation project planning)
2. Familiarization with use of ERP systems (GUI environment)
3. Modeling of basic data of the Supply Chain in the ERP System
4. Basic Supply Chain transactions
5. Modeling of financial data, financial management and costing

Week	Course Topic
1	Introduction – Course Overview • Theoretical background, business goals – ERP Systems Architecture - Case Studies – Project Management of ERP Systems Implementation
2	User Environment in the ERP SAP R/3 • Integration to the User Environment for SAP R/3 – Graphical User Interface – Basic functions – Navigation – Presentation of the GBI Bikes Scenario
3	Materials Management 1 • Basic materials files – Basic supplier files – Generation and modification of basic files
4	Materials Management 2 • Procurement process – Procurement cycle – Request for quotation – Evaluation of Offers – Purchase requisition – Goods receipt - Payments
5	Sales and Distribution 1

	• Theoretical presentation of the sales cycle – Simulation of the sales cycle in SAP – Basic system modeling data – Organizational structures – Basic files (Distribution Channels, Divisions, Customers, Materials, Prices-Discounts etc.)
6	Sales and Distribution 2 • Customer order management – Orders receipt – Delivery – Invoicing – Analytical presentation of all steps in SAP
7	Production Planning and Control 1 • Production organizational units – Theoretical presentation of production models – Basic production model data (Materials, Material Types, Bill of Materials, Work Centers, Routings)
8	Production Planning and Control 2 • Theoretical presentation of basic planning types – Master Production Scheduling (MPS) – Forecasting – Dependent and independent requirements – Transformations and handling of requirements – Production orders – Basic costing
9	Financial Management 1 • Organizational units – Basic accounting data – Accounts – Controlling - Processes
10	Financial Management 2 • Chart of Accounts, Credit Control, Business Area, Balance Sheet, P/L Statement
11	FINAL EXAM

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English). Weekly lectures using instructor presentations and SAP UA material, consisting of theoretical part overview of the respective Project Management functionality, case studies, and application of the respective ERP SAP modules in lab conditions. The students may have access to the SAP system from their own PC throughout the semester, using their private account to carry-out projects and exercises and familiarize with the SAP system. Notes: 1. The course is based in extensive use of PCs throughout. The course is run on the SAP system provided within the framework of cooperation between the University of Piraeus and the SAP University Alliances (UA) Program, through the SAP University Competence Center. 2. SAP System remote access: Given that the University of Piraeus participates in SAP UA, the students are offered the option of remote login from their own space. The students are encouraged to use the system during the entire semester, to explore capabilities and functionalities. However, students must be extremely cautious to nor modify data created by themselves (especially, customizing and data from other students).

<table>
<tr><td></td><td>3. Wherever needed, selected real-life problems will be presented, after adaptation to the course needs.</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform.
Laboratory Education: Use of SAP/R3 and SAP/HANA
Communication with students: Face-to-face at office hours, email, eclass</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.
The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Individual Project</td><td>45</td></tr>
<tr><td>Self-study of lecture material</td><td>70</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>2</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: The final grade of the course is as follows:

• Class participation during lectures and SAP scenario realization → 20%
• Individuals' homework for every module performed in SAP during the semester and submitted by the final exam date → 40%
• Final exam for every SAP module → 40%

In case of failure, in the September re-sits, the grade of the course is formed based on the above scale.

The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.

The written exam and the submission of Case Studies is compulsory. Absence of failure to submit corresponds to nullification of the respective grade.
It is compulsory to attend at least 80% of the lectures. Students who fail to complete the minimum number of attendance, will not be accepted to the final test.

Project topics are presented at the 3rd week of classes. The evaluation criteria are posted on eclass at the beginning of the semester.

Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.</td></tr>
</table>

5. SUGGESTED BIBLIOGRAPHY

The following will be provided in electronic form

- Notes and presentation of instructors
- Teaching material of SAP University Alliance (UA) for every module, comprising of presentations, case studies and exercises
- Functions-in-Detail manuals for every module
- Print files manuals (SAP Help)
- Concise manuals

In addition to the above, the following book is recommended:

[1] Magal, S.R., Word, J. (2009), Essentials of Business Processes and Information Systems, ISBN 978-0-470-23059-6, Wiley.

1.1.2.5 Project Management

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	Δ-ΔΙΕ101	**SEMESTER OF STUDY**	1st
COURSE TITLE	PROJECT MANAGEMENT		
INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHING HOURS**	**CREDITS**
		3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.			
COURSE TYPE *general background, special background, specialized general knowledge, skills development*	General background		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes		
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The course deals with the study and practical training of project management through the integrated study of a project from inception to completion. Initially, the knowledge areas, methodologies and approaches for project evaluation and selection among candidate projects are presented, and the necessity to align the project management objectives with the strategy of an organization are highlighted. Then, a step-by-step presentation of an integrated project plan, is presented, which contains the project charter, the analytic documentation of the project scope, the entire time management aspects, the budget development, the staffing plan and the risk response planning. In each of the course sections, specific techniques and global standards are presented, which corroborate the proper project plan development and provide reliable quantitative indices to support monitoring of the physical and financial progress of a project. In parallel to theoretical sections, a typical project is progressively modeled and examined using MS Project 2013 or 2016. The acquaintance with this software enables students to profit of their knowledge in the job market. The entirety of the course is strongly oriented towards practical application and is thus enriched with pragmatic case studies and representative examples from the Greek and international projects reality.

The course objectives are:

- Learning the basic concepts, methodologies and techniques of modern project management

- Understanding the necessity of aligning project management with the strategy, values and targets of an organization as well as the feeling of the multidimensional impact that projects have on the context they are executed in
- Developing the perception and critical thought for projects that have been or about to be executed and acquiring coherent evaluation criteria for these projects
- Getting acquainted with the most widely spread and globally accepted techniques and standards that facilitate project management and formulate a common international language of communication in these subjects
- Presenting the methodological framework for selecting, developing, executing and monitoring projects and learning one of the most popular project management software
- Encouraging further reading and investigation of this interdisciplinary subject and developing the motivation for professional involvement

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- *Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case*
- *Adapting to new situations*
- *Decision-making*
- *Independent work*
- *Team work*
- *Working in an international environment*
- *Working in an interdisciplinary environment*
- *Introduction of innovative research*
- *Project planning and management*
- *Respect for difference and multiculturalism*
- *Environmental awareness*
- *Social, professional and ethical responsibility and sensitivity to gender issues*
- *Critical consciousness, criticism and self-criticism*
- *Development of free, creative and inductive thinking*

3. COURSE CONTENT

The course deals with the study and practical training of project management through the integrated study of a project from inception to completion. Initially, the knowledge areas, methodologies and approaches for project evaluation and selection among candidate projects are presented, and the necessity to align the project management objectives with the strategy of an organization are highlighted. Then, a step-by-step presentation of an integrated project plan, is presented, which contains the project charter, the analytic documentation of the project scope, the entire time management aspects, the budget development, the staffing plan and the risk response planning. In each of the course sections, specific techniques and global standards are presented, which corroborate the proper project plan development and provide reliable quantitative indices to support monitoring of the physical and financial progress of a project. In parallel to theoretical sections, a typical project is progressively modeled and examined using MS Project 2013 or 2016. The acquaintance with this software enables students to profit of their

knowledge in the job market. The entirety of the course is strongly oriented towards practical application and is thus enriched with pragmatic case studies and representative examples from the Greek and international projects reality.

The course covers the complete perspective of modern Project Management from conception to completion and runs through all knowledge areas. Special emphasis is given to scope, time, cost and risk management, as well as to the globally established techniques of physical and cost tracking. Additionally, the course combines theoretical concepts with some practical training using the MS Project Software.

A combination of teaching and learning methods is employed, aiming to the active participation of the students and the practical application of concepts taught, such as, lectures using audio-visual equipment, analysis and discussion of scientific texts and real-life cases. Moreover, students are called to carry out a group project.

The tentative course schedule is given below:

Session	Week	Knowledge Areas & Assignments
1,2	**1**	Introduction– Outline – Structure – Grading system – Educational goals ***Basic Concepts & Definitions***: Projects, project lifecycle(s) and types, project management, project manager, objectives, key challenges, program, portfolio, stakeholders. Project & product scope, organizational environment, PM knowledge areas.
3	**2**	***Projects Selection Methodology***: projects identification & screening. Projects appraisal aspects, financial appraisal (payback, ROI, NPV, ROI) and examples.
4	**3**	***Project Integration Management***: Overview, developing the project charter, developing the PM plan, directing and managing project work, managing the project knowledge, monitoring & controlling project work, performing integrated change control, closing a project or phase, summary
	3	***Case Study – Group Project***: Team formation, presentation of the case study, group-work to develop the project charter.
5	**4**	***Project Stakeholder Management***: Introduction, stakeholders' identification, planning, managing & monitoring stakeholder engagement, summary, examples of stakeholder identification (power/ influence matrix, salience model, stakeholder register).
	5	***Case Study – Assignment #1***: Group-work to develop and finalize the project charter, business game on presenting the project charter to different stakeholder types, discussion and findings. Group-work to develop stakeholder register, power/influence diagram, presentations, business game, discussion and findings.
6	**6**	***Project Scope Management***: Planning the scope management, collecting requirements, defining the scope, creating the WBS, validating the scope, controlling the scope, summary, examples of practice on the WBS.

7	**7**	***Project Time Management***: Study and organization of activities, estimation of activity duration & cost, estimation types and techniques, cost-duration curve.
	8	***Project Time Management***: Development of project network, dependencies, constraints, network types (AON, AOA), scheduling & critical path method (CPM), examples and problem solving.
	8	***MS Project Demonstration***
8	**9**	***Project Cost Management***: Introduction, planning the cost management, estimating costs, developing the budget, controlling the costs, examples.
	9	***Case Study - Assignment #2***: Group-work to develop and present schedule using MS Project and WBS from Project Assignment #1.
9	**10**	***Earned Value Management***: Parameters, indices, applications.

4. TEACHING METHODS - ASSESSMENT

<table>
<tr><td>TEACHING MODE
Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</td><td>Face-to-face and online lectures (Greek and English).

Weekly lectures using instructor presentations and use of the MS Project software in PCs. At the end of each session, a discussion and overview is performed. The course also contains various case study presentations.</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform.
Laboratory Education: Use of MS Project
Communication with students: Face-to-face at office hours, email, eclass</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.
The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Team Project</td><td>45</td></tr>
<tr><td>Self-study of lecture material</td><td>70</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>2</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: The final grade of the course is as follows:

• Team project (25%)
• Final exam with approximately one hundred multiple-choice questions (65%)
• Class participation during lectures (10%)

In case of failure, in the September re-sits, the grade of the course is formed based on the above scale.</td></tr>
</table>

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.	The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly. The project topic is presented within the first four weeks of classes. Teams are composed of 4-5 students. The project is carried out within a 48-hour (continuous) frame and is evaluated through the presentation of individual deliverables. The evaluation criteria are posted on eclass at the beginning of the semester. The course material, along with articles, audiovisual material, useful information, case studies and exercises, are posted on the eclass platform throughout the semester. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Recommended literature (available at the Library of the University of Piraeus)

- Βιβλίο [59382628]: Διοίκηση Έργων, 11η Έκδοση, Kerzner H., Κατσαβούνης Σ. (επιμ.)
- Βιβλίο [41955477]: Διαχείριση Έργου, Burke R.
- «Διοίκηση Έργων – Μία Διοικητική Προσέγγιση» των MEREDITH R. JACK, MANTEL J. SAMUEL. JR, SHAFER M. SCOT

Scientific and technical articles, audiovisual material and links to quick videos, videos and instructor transparencies will be provided. The entirety of the teaching material, along with the solutions of the lab exercises and the mock tests will be posted in the course web site.

1.2Semester B’

1.2.1 Mandatory Courses

1.2.1.1 Procurement and Supply

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΠΡΕ200	**SEMESTER OF STUDY**	B’
COURSE TITLE	PROCUREMENT AND SUPPLY		
INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g., in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHING HOURS**	**CREDITS**
		3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.			
COURSE TYPE	GENERAL BACKGROUND		
PREREQUISITE COURSES:	ECONOMIC THEORY, BUSINESS ADMINISTRATION, STATISTICS		
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes		
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT179/		

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 qualifications’ cycle, according to the European Higher Education Area’s Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to obtain skills and up-to-date knowledge on subject areas pertaining to procurement and supply. Upon successful completion of the course, the students will be able to:

- be familiar with basic concepts of procurement and supply
- apply tools and methodologies to manage problems relating to the acquisition of materials and services from enterprises and organizations.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Decision-making
- Independent work
- Team work
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking.
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

- Procurement and Supply in a Modern Enterprise
- Strategic View of Procurement and Supply
- Description of Specifications of the Purchased Item
- Supplier Evaluation and Selection
- The Evaluation of Procurement and Supply Performance.

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises. Students will also do group work.

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English). In-class lecturing. During the lectures, course participants are encouraged to participate in order to increase the level of understanding of the subjects being taught. Following the completion of the thematic unit, a case study is distributed in order to strengthen the understanding of the material and in order for participants to practice in solving real life problems. Between course sessions, participants are required to study in-depth the thematic unit that has been taught using international bibliography articles and the corresponding chapters of the basic manuals.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform. **Communication with students:** Face-to-face at office hours, email, eclass.
COURSE DESIGN *Description of teaching techniques, practices and methods:* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography,*	

Activity / Method	*Semester Workload*
Lectures	30
Study and analysis of bibliography	30
Project	60

tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc. *The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS*	<table><tr><td>Self-study of lecture material</td><td>25</td></tr><tr><td>Exams (written)</td><td>3</td></tr><tr><td>Counselling</td><td>2</td></tr><tr><td>Course Total</td><td>***150***</td></tr></table>
STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc.* *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	**Language of exams:** Greek & English in Erasmus classes **Assessment Methods:** Course material is posted at eclass during the semester. The final grade of the course is as follows: • 30% of the final grade from the quality and the presentation of the team project • 70% of the final grade will result from the score on a final example where participants will be asked to complete a test covering the whole of the taught course content, constituted of multiple-choice questions. Project topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 3-5 students. Each assignment requires research and study of up-to-date literature, writing a text of 3000-5000 words (in total) and a 15-minute presentation. In case of failure, the student can participate in the examination period of September. The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- **Λάιος, Λ.** (2010) *Διοίκηση Εφοδιασμού*. 1η Έκδοση, Humantec.
- **Bragg, S.M.** (2021) *Purchasing Guidebook*. 3rd Edition, Accounting Tools, Inc.
- **Johnson, P.F.** (2019) *Purchasing and Supply Management*. 16th Edition, McGraw-Hill Education.
- **Monczka, R.M., Handfield, R.B., Giunipero, L.C., and Patterson, J.L.** (2020) *Purchasing and Supply Chain Management.* 7th Edition, Cengage Learning.
- **Schupp, F., and Wohner, H.** (2020) *The Nature of Purchasing: Insights from Research and Practice.* 1st Edition, Springer.

-Journals:

- International Journal of Integrated Supply Management
- Journal of Public Procurement
- Journal of Purchasing and Supply Management
- Journal of Supply Chain Management, The
- Supply Chain Management: An International Journal

-Lecture Notes

- PowerPoint Transparencies

1.2.1.2 Warehouse Management & Material Handling

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΔΑΔ203	**SEMESTER OF STUDY**	2
COURSE TITLE	WAREHOUSE MANAGEMENT AND MATERIAL HANDLING		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	GENERAL BACKGROUND
PREREQUISITE COURSES:	Sufficient knowledge of supply chain management and quantitative methods
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT194/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is the acquisition of Knowledge and skills in basic thematic units of Warehouse Management and the physical Distribution Networks of the modern enterprises.

Upon successful completion of the course, the students will be able to:

- familiarize with the basic concepts of storage of goods in warehouses and modern distribution centers, as well as the Distribution of goods to end customers.
- understand the important effect of Warehousing on customer service and the financial impact and performance on the distribution channel of a business.
- understand the catalytic effect of the Distribution Network on customer service and financial performance and sustainability of a business.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
	Environmental awareness
	Social, professional and ethical responsibility and sensitivity to

Decision-making *Independent work* *Team work* *Working in an international environment* *Working in an interdisciplinary environment* *Introduction of innovative research*	*gender issues* *Critical consciousness, criticism and self-criticism* *Development of free, creative and inductive thinking*

The general competences that the student should have acquired and that the course is aimed at are:

- Analysis and synthesis of data and information, to solve problems related to Warehousing and Distribution Networks
- Decision making
- Independent work
- Ability to work autonomously as well as in a team within a modern business
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

- Public, Private, Contract and Multiclient Warehousing
- The Strategic Importance of Facility Location
- Design Considerations in Warehousing
- Product Flow Methods
- Storage Systems Principles and Equipment
- Materials Handling Principles and Equipment
- Warehouse Safety Considerations
- Warehousing Operations
- Order Picking Methods
- Warehouse Management Systems
- Warehousing Productivity Analysis
- Warehouse Signposting and Labelling
- Introduction to Distribution Networks
- Basic problems of Physical Distribution
- Operation of Distribution Department
- Cost of Physical Distribution - KPI's - Automation
- Transportation Systems and Distribution
- Accompanying documents & other forms
- Reverse Logistics
- Ex-Van
- Cooperation with carriers.

A combination of teaching and learning methods will be used in order to actively involve students with emphasis on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and videos presentations of real cases. Students will also be involved in group projects.

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at e-class.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	In-class lecturing. Face-to-face and online lectures (Greek and English).
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the e-class platform. **Communication with students:** Face-to-face at office hours, email, e-class, Skype and Microsoft Teams

COURSE DESIGN

Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS

Activity / Method	*Semester Workload*
Lectures	30
Study and analysis of bibliography	38
Site visit	8
Self-study of lecture material	45
Project	25
Exams (written)	3
Counselling	1
Course Total	***150***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS

Detailed description of the evaluation procedures:
Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.

Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at e-class during the semester. The final grade of the course results 50% from Warehouse Management and 50% from Material Handling.
Material Handling grade breaks down as follows:

- 30% from the participation of students in course projects
- 70% of the final grade will result from the score on a final example where participants will be asked to complete a test covering the whole of the taught course content, constituted of multiple-choice questions.

Project topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 3-4 students. Each assignment requires research and study of up-to-date literature, writing a text of 5000-7000 words (in total).

Warehouse Management grade breaks down as follows:

- 20% from the participation of students in course activities.
- 80% of the final grade will result from the score on a final written exam where participants will be asked to complete a test covering the whole of the taught course content, constituted of multiple-choice questions.

In case of failure, the student may participate in the September re-sits.
The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.

Notification of the Assessment Criteria: The evaluation criteria are announced during the first lecture and are clearly stated on the course website and/or e-class. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- **Edward Frazelle**, 2001, *World-Class Warehousing and Material Handling*
- **Scott B. Keller, Brian C. Keller**, 2013, *The Definitive Guide to Warehousing*
- **James A. Tompkins**, Jerry D. Smith, 1998, *The Warehouse Management Handbook*
- **Heinrich Martin**, 2018, *Warehousing and Transportation Logistics*
- **Gwynne Richards**, 2011, *Warehouse Management*
- **David E. Mulcahy**, 1998, *Materials Handling Handbook*
- **Jeroen P. van den Berg**, 2007, *Integral Warehouse Management*
- **Vlasios Giannakainas**, 2003, *Anatomy of Business Logistics*
- **Alan Rushton, Phil Croucher, Dr Peter Baker**, 2017, *The Handbook of Logistics and Distribution Management Understanding the Supply Chain* - Kogan Page
- **Julian Dent**, 2011, *Distribution Channels* - Kogan Page
- **Warren Blanding**, 1982, *Blanding's Practical Physical Distribution: A Handbook for Planning and Operations*, 2nd Edition, Traffic Service Corporation
- **Damon Schechter, Gordon Sander**, 2002, *Delivering the goods : the art of managing your supply chain*, Damon Schechter, Gordon Sander.
- **Paolo Brandimarte, Giulio Zotteri**, 2007, *Introduction to Distribution Logistics*, John Wiley & Sons Inc. Publication.
- **Luca Bertazzi, Grazia Speranza**, *Inovations in Distribution Logistics,* 2009, Springer-Verlag Berlin Heidelberg
- **Donald Waters,** 2003, *Global Logistics and Distribution Planning* - Kogan Page

- Journals:

- *Warehousing Education and Research Council (WERC)*
- *Material Handling and Logistics – Warehousing*
- *Journal of Business Logistics*
- *International Journal of Logistics Management*
- *International Journal of Logistics.*
- *International Journal of Physical Distribution & Logistics Management.*

- Lecture notes

1.2.1.3 Transportation & Distribution Systems

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-MΣΥ103	**SEMESTER OF STUDY**	2nd
COURSE TITLE	TRANSPORTATION AND DISTRIBUTION SYSTEMS		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Special Background
PREREQUISITE COURSES:	NONE
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to discuss and analyse the means of integration and operation of transportation and distribution systems within the context of logistics systems. There is a specific emphasis on the organization and management of "physical" transport flows for the planning of the production and goods movement processes, as well as the means to adapt to market fluctuations.

Upon successful completion of the course, the students will be able to:

- analyze and apply the concepts of demand, supply and cost of freight transport services,
- compare the alternative modes of transport that ensure the movement of goods in the supply chain of companies
- evaluate the alternative ways of organizing the distribution systems of the companies,
- solve problems and make decisions about the company's freight and distribution strategy
- assess the impact of transport policies and decisions on the performance of businesses and their supply chain

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Adapting to new situations
- Decision-making
- Team work
- Independent work
- Introduction of innovative research
- Development of free, creative and inductive thinking
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

- Transport and the economy
- Freight transport as a logistics function
- The concept of distribution system
- Demand and supply of freight transport services, characteristics, determinants, elasticity
- The transport system and its components
- Road, rail and air freight transport
- Sea freight transport: ocean transport and short seas shipping
- Inland navigation in the transport system
- Combined transport and transport mode selection criteria
- Trans European Transport Network
- Production cost of transport services
- Systemic approach of transport and logistics
- External transport cost
- Sustainable transport and distribution
- Planning of distribution systems, facility location problem, routing problem
- Transport and Supply Chain performance
- Risk management

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration. Teaching and learning will take place through a structured program of interactive lectures using audio-visual media and additional learning activities following a student-centered, research informed approach aiming at the development of functional knowledge in the field of transport and distribution systems. Learning activities will take the form of individual and group assignments/exercises, analysis of case studies and real scenarios for discussion and analysis, analysis and discussion of scientific papers, and experiential (group) exercises that respond to course learning outcomes and encourage the development of critical thinking of the students.

Planning and conducting research, individual and group, on a given topic, effective written and oral presentation and communication of research findings are important academic and professional skills.

In this context, for the specific course, the students are invited to carry out a team work followed by a short presentation of their findings.

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at e-class platform.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	In-class lecturing and webinars. Face-to-face and online lectures (Greek and English).
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform. **Communication with students:** Face-to-face at office hours, email, eclass, TEAMS online platform
COURSE DESIGN *Description of teaching techniques, practices and methods:* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.* *The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS*	

Activity / Method	*Semester Workload*
Lectures	30
Group assignment	25
Self-study of lecture material	90
Exams (written)	3
Counselling	2
Course Total	***150***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc* *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	**Language of exams:** Greek & English in Erasmus classes **Assessment Methods:** Course material is posted at eclass during the semester. The final grade of the course is as follows: • Group presentation weighing 50% of the final grade. • Written exam weighing 50% of the final grade. Assignment topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 3-3 students. Each assignment requires research and study of contemporary literature, text writing and a 10-15 minute presentation. In order to successfully complete the course, students should receive an overall grade of 5/10, taking into account the weighting of each assessment. In case of failure, a new date is set in the resit examination period in September, while the team work will be done individually. The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.

	Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Σαμπράκος, Ε. (2018) *Οικονομική των Μεταφορών.* Εκδόσεις Βαρβαρήγου.
- Bowersox, D., Closs D., Cooper M.B. and Bowersox J. (2016) *Logistics: Εφοδιαστική και Διοίκηση Δικτύων Διανομής. 1η Ελληνική έκδοση,* Εκδόσεις Πασχαλίδης, Broken Hill Publisher.
- Christopher, M. (2017) *Logistics και διαχείριση εφοδιαστικής αλυσίδας*. 2η έκδοση, Εκδόσεις Κριτική
- Αχίλλας, Χ., Μπόχτης Δ., Αηδόνης, Δ. και Φωλίνας, Δ. (2020) *Αειφόρες εφοδιαστικές αλυσίδες.* Εκδόσεις Κριτική
- Jean-Paul Rodrigue (2020), *The Geography of Transport Systems.* 5th edition, New York: Routledge
- Coyle, J., Langley, J., Novack, R. and Gibson, B. (2020) *Supply Chain Management, A Logistics Perspective.* Cengage Learning
- Coyle,J., Langley, J., Novack, R. and Gibson, B. (2016) *Transportation: A Global Supply Chain Perspective*. Cengage Learning
- Rushton, A., Croucher, P. and Baker. P. (2014) *The Handbook of Logistics and Distribution Management,* Kogan Page

-Journals:

- Transportation, Planning - Policy - Research – Practice
- Transportation Research Part E: Logistics and Transportation Review
- EURO Journal on Transportation and Logistics
- International Journal of Physical Distribution and Logistics Management
- Transportation

-Lecture notes

-Workshop material

1.2.2 Elective Courses (2/5)

1.2.2.1 Financial Management

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΧΡΔ204	**SEMESTER OF STUDY**	2nd
COURSE TITLE	Financial Management		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized General Knowledge
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT182/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

Financial decisions are of fundamental importance for modern economies and have significant explicit or implicit influence on both corporations and private investors. Finance has now become one of the most successful and active fields of research and application in management and economics. The theoretical basis of finance is strongly diverse integrating fields such as microeconomics, macroeconomics, accounting, mathematics, statistics, operational research, information technology, decision sciences, etc. This course aims at familiarizing students to the theory and practice of financial management. At the beginning, the course introduces students to the Accounting statements, the Financial Markets and their products. Then it deals with the three key decisions in corporate finance concerning: Investments, Financing and Dividends. The presentation is focused on developed markets, such as those of US and Europe, but reference is also made to emerging markets and the Greek markets.

On completing the course the participants will:

- Understand the key issues affecting corporate finance decisions.
- Retrieve Financial data and information from Accounting Statements
- Appreciate the risk-return trade-off
- Evaluate investments using different methodologies
- Assess the value of listed and unlisted companies
- Understand the advantages and disadvantages of using different forms of equity and debt

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according to the case
- Adapting to new situations
- Decision-making
- Independent work
- Team work
- Working in an international environment
- Working in an interdisciplinary environment
- Introduction of innovative research
- Project planning and management
- Respect for difference and multiculturalism
- Environmental awareness
- Social, professional and ethical responsibility and sensitivity to gender issues
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

3. COURSE CONTENT

The course covers the following sections:

- The content of the course can be organized in five thematic parts:
- Introduction to Financial Markets and Management
- Financial Statements
- Analysis and Pricing of Financial Products
- Investment Appraisal
- Investment Financing – Cost of Capital
- Advanced Topics in Financial Management

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

<table>
<tr><td>TEACHING MODE
Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</td><td>Face-to-face and online lectures (Greek and English).

In-class lecturing, webinars, supportive audiovisual material at eclass.</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform.
Laboratory Education: Use of open access and in-house software for laboratory exercises
Communication with students: Face-to-face at office hours, email, eclass</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Group presentations</td><td>26,5</td></tr>
<tr><td>Final group assignment</td><td>50</td></tr>
<tr><td>Self-study of lecture material</td><td>40</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>0,5</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at eclass during the semester. The final grade of the course is as follows:
• 30% from the participation of students in course activities.
• 40% from group exercises and presentations and final group assignment.
• 30% from final written exams.

The written examination includes problem solving/ exercises/case studies. It is conducted with open books.

Project topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 3-5 students. Each assignment requires research and study of up-to-date literature, writing a text of 3000-5000 words (in total) and a 15-minute presentation.

In case of failure, in the September re-sits, the grade of the course is formed based on students' performance on course activities and assignments as well as on their grade on the re-sit exam.

The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.</td></tr>
</table>

	Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Damodaran, A., Applied Corporate Finance, Latest edition, New York: John Wiley & Sons,
- Berk, J. and P. DeMarzo, Corporate Finance, Latest edition, Person International.
- Both books cover most of the material taught in the course and meet the course aims and objectives. The Damodaran book adopts a more practical and less technical approach but is not covering all topics. Berk & DeMarzo provide wider and more in depth coverage of theory and analytical derivation.
- Notes & Papers will be provided by the instructor in hardcopies and/or on the web. Videos, audio and software will be provided also on the course web site

-Journals:

- Journal of Finance
- Review of Financial Studies
- Journal of Corporate Finance
- Journal of Applied Corporate Finance
- Review of Corporate Finance Studies
- Financial Management Journal
- Journal of Financial Management and Accounting
- Financial Review
- Financial Analysts Journal
- European Financial Management
- European Journal of Finance

-Lecture notes

-Workshop material

- Case studies
- Self-assessment tests
- Past exam and assignment papers

1.2.2.2 Zero Waste Management and Circular Economy

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	Π-ZWM208	**SEMESTER OF STUDY**	2nd
COURSE TITLE	Zero Waste Management & Circular Economy		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized general knowledge
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is the contact of the students with the zero waste circular economy. Aims to waste prevention using zero waste innovative companies. Aims to go from the traditional waste management to innovative zero waste systems. Demonstrates the repair and the reuse. Supports the recovery of the waste incineration energy. Aims to the sustainability. Studies the low carbon technology. Aims to the recycling of chemicals and other materials. Investigates the combustion of the Refuse Derived Fuels (RDF) in the cement industry.

Upon successful completion of the course, the students will be able to:

- Stimulate the zero waste circular economy concept.
- Communicate with more specialized scientists and technicians on issues related to waste preventions using zero waste innovative companies.
- Recommend the transition from the traditional waste management to innovative zero waste systems.
- Establish the repair and the reuse options.
- Support the recovery of the waste incineration energy.
- Describe the sustainability concept.
- Support the low carbon technology.

- Stand for the recycling of chemicals and other materials.
- Investigate the combustion of the Refuse Derived Fuels (RDF) in the cement industry.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Adapting to new situations
- Decision-making
- Working in an international environment (ERASMUS)
- Working in an interdisciplinary environment (ERASMUS)
- Introduction of innovative research
- Respect for difference and multiculturalism
- Environmental awareness
- Social, professional and ethical responsibility and sensitivity to gender issues
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

3. COURSE CONTENT

The course covers the following sections:

- Zero waste circular economy.
- Waste preventions using zero waste innovative companies.
- Transition from the traditional waste management to innovative zero waste systems.
- Repair and the reuse.
- Recovery of the waste incineration energy.
- Sustainability.
- Low carbon technology.
- Recycling of chemicals and other materials.
- Combustion of the Refuse Derived Fuels (RDF) in the cement industry.

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises.
In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eClass.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English). In-class lecturing, webinars
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform.

Use of ICT in Teaching, Laboratory Education, Communication with students	**Communication with students:** Face-to-face at office hours, email, eclass
COURSE DESIGN *Description of teaching techniques, practices and methods:* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.* *The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS*	<table><tr><th>*Activity / Method*</th><th>*Semester Workload*</th></tr><tr><td>Lectures</td><td>30</td></tr><tr><td>Self-study of lecture material</td><td>90</td></tr><tr><td>Exams (written)</td><td>3</td></tr><tr><td>Counselling</td><td>27</td></tr><tr><td>Course Total</td><td>***150***</td></tr></table>
STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc* *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	**Language of exams:** Greek & English in Erasmus classes **Assessment Methods:** Course material is posted at e-class during the semester. The final grade of the course is as follows: • 100% from written exams The written examination includes problem solving / exercises. It is conducted with open books. Project topics and evaluation criteria are posted on e-class at the beginning of the semester. In case of failure, in the September re-sits, the grade of the course is formed in exactly the same way as in the first/June examination period. The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or e-class. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- María-Laura Franco-García, Jorge Carlos Carpio-Aguilar, et al. Towards Zero Waste: Circular Economy Boost, Waste to Resources (Greening of Industry Networks Studies, 6, Band 6) 2018.
- Jianming Yang and Agnes Zhang. From Zero Waste to Material Closed Loop: The Way Towards Circular Economy. 2022.
- Stefanie Eva R. Behrendt, Hikaru Osaka, et al. Zero Waste in Business: Simple ideas to make change happen in a circular economy. (English Edition). 2021.
- Claire Potter. Welcome to the Circular Economy: The next step in sustainable living. 2022.
- Lerwen Liu and Seeram Ramakrishna. An Introduction to Circular Economy. 2020.
- Rahul S Mor, Anupama Panghal, et al. Challenges and Opportunities of Circular Economy in Agri-Food Sector: Rethinking Waste (Environmental Footprints and Eco-design of Products and Processes). 2022.

- Atiq Zaman. Zero-Waste: Reconsidering Waste Management for the Future (Routledge Studies in Waste Management and Policy). 2019.
- Peter Lacy , Jessica Long, et al. The Circular Economy Handbook: Realizing the Circular Advantage. 2020.
- Frank Kreith, George Tchobanoglous. Handbook of Solid Waste Management. McGraw-Hill, Kindle Edition, 2nd ed., 2002
- George Tchobanoglous, Hilary Theisen, Samuel Vigil. Integrated Solid Waste Management: Engineering Principles and Management Issues. McGraw-Hill, 1993.
- Edward A. McBean, Frank A. Rovers, Grahame J. Farquhar. Solid Waste Landfill Engineering and Design. Prentice Hall, 1994.
- William A. Worrell, P. Aarne Vesilind, Solid Waste Engineering, 2011.
- Amalendu Bagchi. Design of Landfills and Integrated Solid Waste Management. 3rd ed., 2004.

-Journals:

- Energy
- Journal of Cleaner Production
- Journal of Environmental Management
- Procedia Environmental Sciences
- Renewable and Sustainable Energy Reviews
- Sustainable Production and Consumption
- Waste Management
- Waste Management & Research: The Journal for a Sustainable Circular Economy

-Lecture notes

-Workshop material

1.2.2.3 Strategic Management and Entrepreneurship

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	Δ-ΣΔΕ204	**SEMESTER OF STUDY**	B
COURSE TITLE	STRATEGIC MANAGEMENT & ENTREPRENEURSHIP		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized General Knowledge
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/MIS106/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to understand how different types of organizations design, formulate, and implement value-creating strategies to achieve competitive advantage and superior performance relative to their rivals. The course will therefore focus on the strategy making processes by first analyzing an organization's external environment and internal organization to determine its resources, capabilities, and core competencies—the sources of its "strategic inputs". Further, we will examine the strategy formulation process by discussing business- and corporate-level strategies, paying particular attention to current issues such as ambidextrous and innovation-based strategies, mergers and acquisitions, and global-focused strategies. Finally, we will study the strategy implementation process by analyzing corporate governance, organizational structure, and entrepreneurship as vehicles to realize value from strategic choices.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The role and value of strategic management in achieving high competitiveness and superior long-term performance.

- The practices of analyzing a firm's competitive environment by using different models and tools.
- The different dimensions of a firm's internal environment and importance of its interplay with the external environment.
- The different choices in terms of formulating a successful competitive strategy for attaining above-average, sustainable returns.
- The critical success factors of corporate-level strategies and their importance for a firm's viability and growth.
- The different forms of strategy implementation and their effect of realizing strategy gains.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according to the case
- Adapting to new situations
- Decision-making
- Independent work
- Team work
- Working in an international environment
- Working in an interdisciplinary environment
- Introduction of innovative research
- Project planning and management
- Respect for difference and multiculturalism
- Environmental awareness
- Social, professional and ethical responsibility and sensitivity to gender issues
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

3. COURSE CONTENT

The course covers the following sections:

- Strategic management and strategic competitiveness.
- The analysis of external environment.
- The internal environment: Resources, capabilities and the sources of competitive advantage.
- Business-level strategies.
- Corporate-level strategies.
- Corporate governance mechanisms.
- Organizational structure and controls for implementing strategy.
- The role of entrepreneurship in strategy formulation.
- Design and development of entrepreneurial ventures in incumbent and start-up companies.

A combination of teaching and learning methods will be used to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises, case study and

scenario analyses, guest lectures. Students will also do group work (per week but also as part of their final course evaluation).
In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

<table>
<tr><td>TEACHING MODE
Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</td><td>In-class lecturing, webinars, supportive audiovisual material at eclass.</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform.
Laboratory Education: Use of open access and in-house software for laboratory exercises
Communication with students: Face-to-face at office hours, email, eclass</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Group presentations</td><td>26,5</td></tr>
<tr><td>Final group assignment</td><td>50</td></tr>
<tr><td>Self-study of lecture material</td><td>40</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>0,5</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at eclass during the semester. The final grade of the course is as follows:
• 30% from the participation of students in course activities.
• 40% from group exercises and presentations and final group assignment.
• 30% from final written exams.

The written examination includes problem solving/ exercises/case studies. It is conducted with open books.

Project topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 3-5 students. Each assignment requires research and study of up-to-date literature, writing a text of 3000-5000 words (in total) and a 15-minute presentation.
In case of failure, in the September re-sits, the grade of the course is formed based on students' performance on course activities and assignments as well as on their grade on the re-sit exam.
The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent</td></tr>
</table>

	institution) is performed according to the relevant procedure decided by the Department Assembly. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Arthur A Thompson, Margaret Peteraf A., John E Gamble, J. Strickland III, Jr. (2022) Crafting and Executing Strategy: The Quest for Competitive Advantage, 23rd edition, McGraw-Hill.
- Michael A. Hitt, R. Duane Ireland, Robert E. Hoskisson, (2020). Strategic Management: Competitiveness and Globalization, 13th Edition, Cengage Learning.
- Charles W. L. Hill, Gareth R. Jones, Melissa A. Schilling, (2020). Strategic Management: An Integrated Approach, 13th Edition, Cengage Learning.
- Robert M. Grant (2016). Contemporary Strategy Analysis, 9th edition, Wiley.
- Johnson G., R. Whittington, K. Scholes, D. Angwing and P. Renger, (2020). Exploring Strategy: Text and Cases, 16th edition, Prentice Hall.
- Barney, J. and W.S. Hesterly, (2018). Strategic Management and Competitive Advantage, 6th Edition, Pearson.

-Journals:

- Strategic Management Journal
- Entrepreneurship Theory & Practice
- Strategy Science
- Organization Science
- Academy of Management Journal
- Strategic Entrepreneurship Journal
- Journal of Management
- Administrative Science Quarterly

-Lecture notes

-Workshop material

- Case studies
- Self-assessment tests
- Past exam and assignment papers

1.2.2.4 Advanced ERP Systems for Supply Chain Management – SAP Applications

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΠΕRP207	**SEMESTER OF STUDY**	2st
COURSE TITLE	ADVANCED ERP SYSTEMS FOR SUPPLY CHAIN MANAGEMENT – SAP APPLICATIONS		
INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHING HOURS**	**CREDITS**
		3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.			
COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Skills development		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes		
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The course "**Advanced Topics on ERP Systems – Applications with SAP**" presents special and advanced topics of design, planning and management of the Supply Chain using the ERP SAP system, and focuses on business process integration, covering its entire spectrum. The business operations that are addressed in the course lectures and the respective ERP modules are tabulated below:

Business Process	**Module**
Sales	(SD) – Sales and Distribution
Production	(PP) – Production Planning and Control
Procurement	(MM) – Materials Management
Project Management	(PS) – Project System
Storage	(WM) – Warehouse Management
Financial Management	(FI/CO) – Financial Management / Controlling

The aim of the course "**Advanced Topics on ERP Systems – Applications with SAP**" is to provide to the students with an understanding of the mechanisms and the ways an ERP system employs in taking complex and complete decisions related to Supply Chain operations. Discrete objectives are

summarized in the students gaining a broad knowledge spectrum corresponding to complex business problems, such as, in particular:

- Planning and execution of complex, realistic business operations of the Supply Chain
- Identification of integration points between supply chain functions and verification of relationships during their planning
- Project modeling and management
- Special supply chain transactions
- Executive reporting

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Adapting to new situations
- Decision-making
- Independent work
- Working in an interdisciplinary environment
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

3. COURSE CONTENT

The course "**Advanced Topics on ERP Systems – Applications with SAP**" focuses in the integration of business processes and in advanced topics with the use of the ERP system. In particular, this course begins by presenting integration scenario of Logistics operations using SAP and the ways that information flows are implemented, to support complex decisions. Then, complex, advanced topics for each operational area are presented, by emphasizing in the modeling of complex business scenario and the offered tools for planning, management and decision-making. Furthermore, the functionality of Project System of SAP is presented, to design and deliver new products, along with the Production Planning and Control subsystem. For every operational area, the respective executive reporting tools are presented.

Week	Topic
1	Special Topics on Sales and Distributions 1 • Partial deliveries – Returns – Mass transactions (Due List)
2	Special Topics on Sales and Distributions 2 • Complex business scenaria – 3rd party order management – Consignments - Service management
3	Special Topics on Materials Management 1

	• Inventory management – Stock transactions – Inventory disposal
4	Special Topics on Materials Management 2 • Management Information System (MIS)
5	Special Topics on Warehouse Management 1 • Warehouse organizational structures – Putaway processes – Picking processes for production and delivery
6	Special Topics on Warehouse Management 2 • Internal warehouse transactions – USE of RF terminals – Recoding of physical inventory
7	Special Topics on Production Planning and Control 1 • Configurable products – Classification - MRP
8	Special Topics on Production Planning and Control 2 • Detailed production planning – CAPP modeling – Project modeling • Project Work Breakdown Structure (WBS)
9	Project Management • Project implementation monitoring – Connection with production subsystem
10	Special Topics on Financial Management • Payables – Receivables – Assets accounts – Reports • Organizational Units – Cost centers – Profit centers – Distributions – Cost control
11	FINAL EXAM

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English). Weekly lectures using instructor presentations and SAP UA material, consisting of theoretical part overview of the respective Project Management functionality, case studies, and application of the respective ERP SAP modules in lab conditions. The students may have access to the SAP system from their own PC throughout the semester, using their private account to carry-out projects and exercises and familiarize with the SAP system. <u>Notes:</u> 4. The course is based in extensive use of PCs throughout. The course is run on the SAP system provided within the framework of cooperation between the University of Piraeus and the SAP University Alliances (UA) Program, through the SAP University Competence Center. 5. SAP System remote access: Given that the University of Piraeus participates in SAP UA, the students are offered the option of remote login from their own space. The students are encouraged to use the system during the entire semester, to explore capabilities and functionalities. However, students must be extremely cautious to nor modify

<table>
<tr><td></td><td>data created by themselves (especially, customizing and data from other students).
6. Wherever needed, selected real-life problems will be presented, after adaptation to the course needs.</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform.
Laboratory Education: Use of SAP/R3 and SAP/HANA
Communication with students: Face-to-face at office hours, email, eclass</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.
The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Individual Project</td><td>45</td></tr>
<tr><td>Self-study of lecture material</td><td>70</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>2</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: The final grade of the course is as follows:
• Class participation during lectures and SAP scenario realization → 20%
• Individuals' homework for every module performed in SAP during the semester and submitted by the final exam date → 40%
• Final exam for every SAP module → 40%

In case of failure, in the September re-sits, the grade of the course is formed based on the above scale.
The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.
The written exam and the submission of Case Studies is compulsory. Absence of failure to submit corresponds to nullification of the respective grade.
It is compulsory to attend at least 80% of the lectures. Students who fail to complete the minimum number of attendance, will not be accepted to the final test.
Project topics are presented at the 3rd week of classes. The evaluation criteria are posted on eclass at the beginning of the semester.

Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.</td></tr>
</table>

5. SUGGESTED BIBLIOGRAPHY

The following will be provided in electronic form

- Notes and presentation of instructors
- Teaching material of SAP University Alliance (UA) for every module, comprising of presentations, case studies and exercises
- Functions-in-Detail manuals for every module
- Print files manuals (SAP Help)
- Concise manuals

In addition to the above, the following book is recommended:

[1] Magal, S.R., Word, J. (2009), Essentials of Business Processes and Information Systems, ISBN 978-0-470-23059-6, Wiley.

1.2.2.5 Quality and Risk Management

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	Δ-ΔΠΚ201	**SEMESTER OF STUDY**	2°
COURSE TITLE	Quality and Risk Management		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized
PREREQUISITE COURSES:	No prerequisites Basic knowledge on Project Management and Statistics is necessary
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The course evolves in two parts:

The 1st part of the course aims at introducing postgraduate students in the field of project risk management for the complete lifecycle of small, medium and large-scale projects. Furthermore, it provides students with in-depth understanding of fundamental methodologies and IT tools which support decision-making in the areas of project risk identification, evaluation, planning and monitoring.

The 2nd part of the course aims at introducing postgraduate students in the field of quality management of projects for their complete lifecycle. It introduces students in the concept of quality and the basic management processes (quality planning, assurance and control). For each of them, provides students with in-depth understanding of IT tools and techniques according to widely accepted and used methodologies.

The material is aligned with globally applied methodologies and techniques as defined by Project Management Institute (PMI).

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case *Adapting to new situations* *Decision-making* *Independent work* *Team work* *Working in an international environment* *Working in an interdisciplinary environment* *Introduction of innovative research*	*Project planning and management* *Respect for difference and multiculturalism* *Environmental awareness* *Social, professional and ethical responsibility and sensitivity to gender issues* *Critical consciousness, criticism and self-criticism* *Development of free, creative and inductive thinking*

The objective of the course is to provide fundamental and advanced knowledge in methodologies and tools. After the successful completion of the course participants are expected to be able to:

- Understand the importance of risk management in projects
- Realize their role as members of project teams and the mechanisms of working in groups
- Identify potential internal and external risks in projects
- Evaluate risks and potential consequences based on qualitative and quantitative methods
- Develop risk management plans for projects
- Making decisions to cope with risks in projects
- Understand the importance of quality management in a project
- Implement basic quality management processes (planning, assurance, control)
- Develop quality plans for projects
- Use statistical quality management methods
- Independent work
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

A. Project Risk Management
- Theoretic background in project risk management – concepts and definitions
- Organizational design of risk management
- Risk identification methods and tools
- Qualitative and quantitative risk evaluation methods
- Project monitoring / dealing with risk (risk registry)
- Workshop: development of a complete project risk plan

B. Project Quality Management
- Theoretic background of quality management emphasizing on project managements
- Quality planning, assurance and control
- Methods and tools for quality management
- Workshop: development of a complete project quality plan

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English). The course evolves in ten 3-hour sessions. Each session consists of formal lecture (presentation of theoretic content) followed by active discussion on the interrelationship between theory and practice. Additionally, the instructor presents basic IT applications related to the theory and then participants are expected to use these applications in relevant case studies provided by the instructor.

Participants are expected to devote twice this amount of time in private and group study, assignments and preparation for final exams.

Combined use of instruction and educational methods applies, aiming at the active participation of students and practical application of the knowledge acquired for each topic.

- Lectures using multimedia, analysis and discussion on scientific articles and case studies
- Hands-on training on SW applications related to quantitative analysis, qualitative analysis, modeling and decision making
- Students are also required to work in 4-5 person groups and develop 2 large scale studies (Project Risk Plan, Project Quality Plan), which will be presented in 2 workshops

USE OF INFORMATION AND COMMUNICATION TECHNOLOGY

Use of ICT in Teaching, Laboratory Education, Communication with students

Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform.

Laboratory Education:

Hands-on laboratory training on freeware/demo versions of relevant SW tools, used also during the elaboration of large-scale studies:

- Mindmapping
- Business process modeling (BPMN)
- Group Decision Making (Nominal Group Technique)
- Decision Trees
- Monte Carlo Simulation
- Statistical Tools
- Statistical Process Control

Course E-class: Eclass will be used to upload articles, multimedia material, course material, links, case studies and other support material which enhances learning experience and efficiency.

Communication with students: Face-to-face at office hours, email, eclass

COURSE DESIGN

Description of teaching techniques, practices and methods:

Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS

Activity / Method	*Semester Workload*
Lectures	20
Laboratory lectures and hands-on	10
Project	40
Self-study of lecture material	40
Exams (written)	2
Counselling	8
Course Total	***120***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS

Detailed description of the evaluation procedures:

Language of evaluation, assessment methods, formative or summative (conclusive), multiple

Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at eclass during the semester. The final grade of the course is as follows:

choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	• 40%: the study deliverables (Project Quality Plan, Project Risk Plan) and workshop presentation • 60%: final exam The written examination includes problem solving / exercises. It is conducted with open books. Project topics and evaluation criteria are posted on eclass at the beginning of the semester. Study groups consist of 4-5 students. Each assignment requires research and study of up-to-date literature, writing a text of 8000-10000 words (in total), a 20-minute presentation and 10-minute Q&A In case of failure, students can participate in the September re-sits, The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Pritchard, C.L. (2015) Risk Management: Concepts and Guidance, 5th edition, Boca Raton, CRC Press, Taylor and Francis Group
- Chapman, C., Ward, S. (2003) Project Risk Management: Processes, Techniques and Insights, 2nd edition, West Sussex, John Wiley and Sons
- Montgomery, D.C. (2009) Introduction to Statistical Quality Control, John Wiley and Sons
- Kerzner, H., (2009) Project Management: A Systems Approach to Planning, Scheduling and Controlling, Hoboken, NJ, John Wiley and Sons
- A Guide to the Project Management Body of Knowledge, PMI

-Journals:

- International Journal of Managing Projects in Business
- International Journal of Project Management
- Project Management Journal
- Engineering management journal

-Lecture notes

Lecturer's slides and notes will be provided in electronic format in e-class

-Workshop material

Workshops' presentations will be available in e-class

1.3 Semester C'

1.3.1 Mandatory Courses

1.3.1.1 MSc Thesis

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE		**SEMESTER OF STUDY**	3rd
COURSE TITLE	DISSERTATION		
INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHING HOURS**	**CREDITS**
Elaboration of Dissertation			12
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.			
COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Special background / Skills development		
PREREQUISITE COURSES:	None		
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes		
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.* • *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B* • *Guidelines for writing Learning Outcomes*
The Dissertation is compulsory for all postgraduate students, lasts one semester and it is equivalent to 12 ECTS. In the context of this activity, the student works under the supervision of a faculty member of the Department with a research subject and is guided in the search, study and evaluation of literature, in the composition and writing of the thesis, as well as in the oral presentation of the work. Upon successful completion of the Dissertation, students will: • Have studied in depth a specific topic within the scientific areas of the postgraduate study program • Have used their relevant knowledge acquired during their studies • Have developed a skill for synthesis • Have learned to search for appropriate scientific information from the relevant scientific literature

- Have acquired skill in writing a scientific text
- Have acquired competence in organizing and presenting the topic of the work
- Have gained experience in the research process
- Have gained experience in laboratory research (if the project concerns laboratory work)

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Adapting to new situations
- Decision-making
- Independent work
- Working in an international environment
- Introduction of innovative research
- Project planning and management
- Respect for difference and multiculturalism
- Environmental awareness
- Social, professional and ethical responsibility and sensitivity to gender issues
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

3. COURSE CONTENT

Dissertation involves four phases that include:

- Search and study of bibliography
- Performance of research / laboratory work
- Paper writing
- Paper presentation

For the preparation of the thesis and the assignment of the student to a supervising faculty member, the Dissertation Writing Guide is observed.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English).	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	During the performance of the dissertation and the preparation of the thesis, search engines are used and, depending on the nature of the work, specialized software and/or laboratory equipment **Communication with students:** face-to-face at office hours, email, eclass, teams	
COURSE DESIGN	***Activity / Method***	***Semester Workload***

Description of teaching techniques, practices and methods: *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.* *The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS*	Meetings with the supervisor	72
	Search and study of bibliography	72
	Performance of the research work	93
	Paper writing	60
	Paper presentation	3
	Course Total	***300***
STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc* *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	**Language of exams:** Greek & English in Erasmus classes **Assessment Methods:** The assessment methods are described in the Dissertation Writing Guide. The final grade is obtained after the presentation of the thesis before a three-member examination committee. **Notification of the Assessment Criteria:** The evaluation criteria are clearly stated in the Dissertation Writing Guide which is posted on the graduate program website.	

5. SUGGESTED BIBLIOGRAPHY

-Suggested Bibliography : relevant to the topic
-Scientific Journals: relevant to the topic

1.3.2 Elective Courses (3/8)

1.3.2.1 Managing knowledge and organizational change

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΔΓΟ303	**SEMESTER OF STUDY**	A & C
COURSE TITLE	MANAGING KNOWLEDGE AND ORGANIZATIONAL CHANGE		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized General Knowledge
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT182/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to understand why and under which conditions and mechanisms knowledge is considered as one of the most important resources of modern organizations, leading to successful implementation of organizational changes, generation of innovation, and attainment of sustainable competitive advantage. This course, therefore, aims at understanding and implementing concepts and management practices that refer to the effective acquisition, processing, and use of knowledge resources in a way that allows organizations to learn, innovate, adapt to changes occurring in their internal and external environment, and achieve high performance

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The different approaches towards managing organizational knowledge and the corresponding practices of completing knowledge-based projects within modern organizations.
- The mechanisms and processes of acquiring and utilizing knowledge assets for attaining innovative outcomes and managing (technological and organizational) changes.
- The different strategies available for establishing and managing collaborations and alliances for managing knowledge resources and organizational change.
- The interrelationship between knowledge resources and organizational learning, and the management of tensions and (seemingly) conflicting strategic goals.
- The key success factors of project teams designed to manage key knowledge assets and organizational change.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according to the case
- Adapting to new situations
- Decision-making
- Independent work
- Team work
- Working in an international environment
- Working in an interdisciplinary environment
- Introduction of innovative research
- Project planning and management
- Respect for difference and multiculturalism
- Environmental awareness
- Social, professional and ethical responsibility and sensitivity to gender issues
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

3. COURSE CONTENT

The course covers the following sections:

- Introduction to knowledge management and organizational change
- Structure and characteristics of knowledge-based organizations and the importance of managing change
- Organizational resources and strategic alliances for managing knowledge assets and change initiatives
- Managing knowledge and organizational learning
- Managing knowledge-based and change-focused teams
- Different models and practices for managing organizational change
- Knowledge creation, innovation, and organizational changes
- Designing and implementing a strategy for managing knowledge and organizational change

A combination of teaching and learning methods will be used to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises, case study and scenario analyses, guest lectures. Students will also do group work (per week but also as part of their final course evaluation).
In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

<table>
<tr><td>TEACHING MODE
Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</td><td>In-class lecturing, webinars, supportive audiovisual material at eclass.

Face-to-face and online lectures (Greek and English).</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform.
Laboratory Education: Use of open access and in-house software for laboratory exercises
Communication with students: Face-to-face at office hours, email, eclass</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Group presentations</td><td>26,5</td></tr>
<tr><td>Final group assignment</td><td>50</td></tr>
<tr><td>Self-study of lecture material</td><td>40</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>0,5</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at eclass during the semester. The final grade of the course is as follows:
• 30% from the participation of students in course activities.
• 40% from group exercises and presentations and final group assignment.
• 30% from final written exams.

The written examination includes problem solving/ exercises/case studies. It is conducted with open books.

Project topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 3-5 students. Each assignment requires research and study of up-to-date literature, writing a text of 3000-5000 words (in total) and a 15-minute presentation.</td></tr>
</table>

	In case of failure, in the September re-sits, the grade of the course is formed based on students' performance on course activities and assignments as well as on their grade on the re-sit exam. The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Schilling, M. (2020). Strategic Management of Technological Innovation. Sixth Edition, McGraw – Hill: New York, NY. ISBN:9780071289573.
- Tidd, J., & Bessant, J. (2018). Managing Innovation: Integrating Technological, Market and Organizational Change. Sixt Edition, John Willey & Sons: England.
- Newell, S., Robertson, M., Scarbrough, H. & Swan, J. (2009). Managing Knowledge Work and Innovation. Second Edition, Palgrave: Basingstoke, Hampshire. ISBN:9780230522015.
- Nonaka, I. & Takeuchi, H. (1995). The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation. Oxford University Press: Oxford.
- Davenport, T. & Prusak, L. (2000). Working Knowledge: How organisations manage what they know. Harvard Business School Press: Cambridge, MA.

-Journals:

- Journal of knowledge Management
- Management Learning
- Journal of Product Innovation Management
- Research Policy
- Technovation
- California Management Review
- Journal of Change Management

-Lecture notes

-Workshop material

- Case studies
- Self-assessment tests
- Past exam and assignment papers

1.3.2.2 Human Resource Management

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	Δ-ΔΑΠ100	**SEMESTER OF STUDY**	A & C
COURSE TITLE	HUMAN RESOURCE MANAGEMENT		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized General Knowledge
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT216/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to understand how human resource management operates as a critical condition for the design and implementation of an organization's strategy, for achieving competitive advantage, and for attaining positive organizational performance. The course will be therefore analyzing the management practices and concepts implemented for high job performance and satisfaction, for achieving high motivation in complex tasks, and for the effective management of employee's personality and behavior. Further, we will analyze team and organizational performance by emphasizing on topics such as leadership, communication, group dynamics, conflict management and negotiations, and current forms of organizing work.

Upon successful completion of the course, the students will be able to develop a set of skills and increase their understanding of key concepts referring to:

- The role of human resources in an organization's strategy and performance.
- The practices of managing a diverse workforce in relation to their personality, behavior, motivation, and emotions.
- The practices and behaviors of effective leadership in highly dynamic environments.

- The critical success factors of teamwork, focusing on managing conflicts and on understanding the role of power and politics.
- The different forms of organizing work and the role of organizational culture.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according to the case
- Adapting to new situations
- Decision-making
- Independent work
- Team work
- Working in an international environment
- Working in an interdisciplinary environment
- Introduction of innovative research
- Respect for difference and multiculturalism
- Environmental awareness
- Social, professional and ethical responsibility and sensitivity to gender issues
- Critical consciousness, criticism and self-criticism
- Development of free, creative and inductive thinking

3. COURSE CONTENT

The course covers the following sections:

- Strategic approaches in managing human capital and organizational behavior.
- The importance of personality, behavior, and emotions.
- Concepts and practices of motivating people.
- Concepts and practices of leading people.
- Managing organizational teams.
- Conflict management, negotiations, power, and politics.
- Current organizational structures and the role of culture.

A combination of teaching and learning methods will be used to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises, case study and scenario analyses, guest lectures. Students will also do group work (per week but also as part of their final course evaluation).

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

<table>
<tr><td>TEACHING MODE
Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</td><td>In-class lecturing, webinars, supportive audiovisual material at eclass.

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Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform.
Laboratory Education: Use of open access and in-house software for laboratory exercises
Communication with students: Face-to-face at office hours, email, eclass</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Group presentations</td><td>26,5</td></tr>
<tr><td>Final group assignment</td><td>50</td></tr>
<tr><td>Self-study of lecture material</td><td>40</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>0,5</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at eclass during the semester. The final grade of the course is as follows:
• 30% from the participation of students in course activities.
• 40% from group exercises and presentations and final group assignment.
• 30% from final written exams.

The written examination includes problem solving/ exercises/case studies. It is conducted with open books.

Project topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 3-5 students. Each assignment requires research and study of up-to-date literature, writing a text of 3000-5000 words (in total) and a 15-minute presentation.

In case of failure, in the September re-sits, the grade of the course is formed based on students' performance on course activities and assignments as well as on their grade on the re-sit exam.

The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.</td></tr>
</table>

	Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Noe, R.A, Hollenbeck, J.R, Gerhart, B. and Wright, P.M. (2023), Human Resource Management: Gaining a Competitive Advantage, 13th Edition, McGraw-Hill Irwin.
- Jason A. Colquitt, Jeffery A. LePine, Michael J. Wesson, (2021). Organizational Behavior: Improving Performance and Commitment in the Workplace, 7th Edition, Mc Graw Hill.
- Michael A. Hitt, Adrienne Colella and C. Chet Miller. (2017). Organizational Behavior, 5th Edition, Wiley.
- Mathis. R.L, Jackson J.H and Valentine, S.R., P. Meglich (2017). Human Resource Management, 15th edition, Cengage Learning.
- Stephen P. Robbins, Timothy A. Judge, (2016), Organizational Behavior, 17th Edition, Pearson.
- Buchanan, D.A. and Huczynski, A.A. (2010), Organization Behaviour, 6th Edition, Financial Times Prentice Hall.

-Journals:

- Human Resource Management
- International Journal of Human Resource Management
- Journal of Organizational Behavior
- Journal of Management
- Journal of Management Studies
- Personnel Psychology
- Academy of Management Journal

-Lecture notes

-Workshop material

- Case studies
- Self-assessment tests
- Past exam and assignment papers

1.3.2.3 Industry 4.0 Systems

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-IND302	**SEMESTER OF STUDY**	3rd
COURSE TITLE	Industry 4.0 Systems		
INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*		**WEEKLY TEACHING HOURS**	**CREDITS**
		3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.			
COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized general knowledge		
PREREQUISITE COURSES:	None		
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes		
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

Modern world is characterized by the emergence of a new production model that is internationally identified by the term Industry 4.0. The core of this model is based on the increased digitization of production processes, in which physical objects are integrated with the information network, allowing the decentralization of production and its adaptation to the prevailing external conditions in real time. Key feature of this new model is the extensive further automation of production systems in order to increase their speed, flexibility and efficiency, without jeopardizing sustainability and/or safety. The scope of the course is to present in detail this new model that combines both elements of new technologies and forms of organization, such as cyber-physical systems, decentralized production systems, 'smart' logistics/manufacturing systems, 'smart' energy systems, advanced work support systems, etc.

Upon successful completion of the course, the students will have understood the concept of Industry 4.0 and the associated technologies involved, analyzing and discussing relevant topics such as:

- Industrial Internet of Things – IIoT
- Advanced/'Smart' Manufacturing
- 'Smart' Factory & Products
- Ppreventive diagnostics techniques and facility maintenance
- Digital Twins, Augmented Reality, etc.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
- Adapting to new situations
- Decision-making
- Independent work
- Working in an international environment (ERASMUS)
- Working in an interdisciplinary environment (ERASMUS)
- Introduction of innovative research
- Project planning and management
- Respect for difference and multiculturalism
- Social, professional and ethical responsibility and sensitivity to gender issues
- Critical consciousness, criticism and self-criticism
  Development of free, creative and inductive thinking

3. COURSE CONTENT

The course covers the following topics:

- Introduction to the concept of Industry 4.0
- Industrial Internet of Things (IIoT)
- IIoT Key Enabling Technologies
- Cloud Computing, Edge & Fog Computing, 5G-mobile telecommunications
- Industrial Analytics
- Digital Twins
- Additive Manufacturing Technologies – 3D Printing
- IoT Applications (Smart agriculture, Smart Health, Smart cities and electricity grids)

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises.
In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at e-class.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	In-class lecturing/seminars and/or webinars. Face-to-face and online lectures (Greek and English).
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the e-class platform. **Communication with students:** Face-to-face at office hours, email, e-class

<table>
<tr>
<td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td>
<td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Project</td><td>60</td></tr>
<tr><td>Self-study of lecture material</td><td>30</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>27</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td>
<td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at e-class during the semester. The final grade of the course is as follows:
• 80% from the project (both written text and oral presentation)
• 20% from the participation of students in course activities
Project topics and evaluation criteria are posted on e-class at the beginning of the semester.
In case of failure to complete the project in the first examination period, the project is submitted and assessed via an oral presentation in September re-sit examination period.
The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.

Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or e-class. Students have the opportunity to receive explanations about the grade they received.</td>
</tr>
</table>

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Holler J., Tsiatsis V., Mulligan C., Avesand S., Karnouskos S. and Boyle D., *From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence,* Elsevier Academic Press, 2014
- Ustundag A. and Cevikcan E., *Industry 4.0: Managing the Digital Transformation*, Springer, 2018

- Relevant Journals (indicative):

- *Computers in Industry*
- *International Journal of Advanced Manufacturing Technologies*
- *Journal of Intelligent Manufacturing*
- *Journal of Cleaner Production*
- *Journal of Intelligent and Fuzzy Systems*

- Lecture notes

- Workshop material

1.3.2.4 Equipment and Facility Maintenance

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΣΕΕ304	**SEMESTER OF STUDY**	3ο
COURSE TITLE	Equipment & Facility Maintenance		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Specialized general knowledge
PREREQUISITE COURSES:	No
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The requirement of applying facility management to a company's building facilities is well known. Service logistics, the support after sale activities of a fixed asset, device or installation to operate optimally and continuously during the warranty period and/ or its overall life cycle is a key element in the viability of the corresponding businesses. Also, in manufacturing companies the performance depends directly on the availability of their equipment. Management of maintenance and spare parts are the main activity in all three above functions. In this context, the aim of the course is to analyze key concepts about Management, Organization, Operation and Alternative Maintenance and Spare Parts Policies in a company.

Topics that addressed in the course include:

- Modern trends in corrective, preventive, total productive maintenance (TPM), and reliability centered maintenance as well as the effect of maintenance in energy saving, environmental protection and personnel safety
- Current trends, options, and guidelines for drafting and managing the best maintenance service contract when outsourcing to contractors (OUTSOURCING)
- Application of computerized tools for maintenance and spare parts management

Upon successful completion of the course, the students will:

- understand the alternative ways of maintenance and the way they are designed and organized in a business as well as management activities for the required spare parts
- become familiar with the alternative options in outsourcing maintenance and drafting the corresponding contracts
- understand how to apply computer assisted tools in maintenance activities
- understand the need of adopting modern organizational practices for equipment and facilities management where the concept of availability, reliability , energy saving, and operator safety prevails
- successfully apply the techniques taught in real situations

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Teamwork
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, using technologies that are necessary according to the case
- Adapting to new situations
- Decision-making
- Teamwork
- Independent work
- Working in an international environment
- Working in an interdisciplinary environment Introduction of innovative research
- Project planning and management
- Respect for difference and multiculturalism
- Environmental awareness
- Social, professional and ethical responsibility and sensitivity to gender issues
- Development of free, creative and inductive thinking

3. COURSE CONTENT

The course covers the following sections:

- General concepts of maintenance
- Equipment hierarchy, Computerized Maintenance Management Systems (CMMS) and EBOM (Equipment bill of material)
- Different Ways of Maintenance
- Outsourcing in maintenance and different types of contracts
- Management of spare parts
- Mean time between failures (MTBF), failure (hazardous) rate, reliability and their use in maintenance management
- Maintenance performance indicators and the OEE index (overall equipment efficiency)

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using

audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises. Also, students will prepare teamwork case study.

In addition, articles, audiovisual lecture material, web addresses, useful information, case studies and exercises for the practice of students are posted in electronic form in e-class.

4. TEACHING METHODS - ASSESSMENT

<table>
<tr><td>TEACHING MODE
Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</td><td>In-class lecturing, webinars

Face-to-face and online lectures (Greek and English).</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the e-class platform.
Communication with students: Face-to-face at office hours, email, e-class</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Project</td><td>15</td></tr>
<tr><td>Self-study of lecture material</td><td>90</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>12</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at e-class during the semester. The final grade of the course will be formed from a project case study, written examination, and the student participation in the course activities.

Written examination includes multiple choice questions judgment questions and problem solving / exercises.

Project topics and evaluation criteria are posted on e-class at the beginning of the semester. 3-5 student groups are formed. Each project/assignment requires research and study of up-to-date literature, a writing part of 3000-5000 words and a 15-minute presentation.

In case failure, the grade of the course is formed with new written examination during the September re-sit examination period.

The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.</td></tr>
</table>

	Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or e-class. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- *Greek*

1. Επιχειρησιακή έρευνα αντικατάσταση συντήρηση αξιοπιστία ΔΗΜΗΤΡΗΣ ΞΗΡΟΚΩΣΤΑΣ
2. A guide to the project management body of knowledge (PMBOK) Μετάφραση Δημήτρης Εμίρης
3. Εγχειρίδιο διαχείρισης κινδύνων έργων Κων/νος Κηρυττόπουλος

- *Foreign*

4. THE FACILITY MANAGEMENT HANDBOOK David G. Cotts Kathy O. Roper Richard P. Payant AMERICAN MANAGEMENT ASSOCIATION
5. Handbook of Maintenance Management (Volume 1) Second Edition Joel Levitt
6. Operations & Maintenance Best Practices A Guide to Achieving Operational Efficiency G. P. Sullivan(a) R. Pugh A. P. Melendez W. D. Hunt
7. Principles of operation management HEIZER RENDER
8. Maintenance-planning-and-scheduling-handbook-2nd-e Doc Palmer McGraw-Hill
9. Industrial engineering handbook MAYNARD Mc Graw Hill
10. Management Harold Koontz Heinz Weihrich Mc Graw Hill
11. Training material in maintenance management with the support of the European commission's Leonardo da Vinci programme
12. Maintenance strategies and standards INSTITUT FÜR TECHNOLOGIE UND MANAGEMENT IM BAUBETRIEB (TMB) – FACILITY MANAGEMENT
13. Propositie-Service-Logistiek-WP-SL-Final
14. Maintenance Today and Future Trends Andrew Starr, Basim Al-Najjar, Kenneth Holmberg, Erkki Jantunen, Jim Bellew and Alhussein Albarbar
15. Operations & Maintenance Best practices FEDERAL ENERGY MANAGEMENT PROGRAM
16. Operation and Maintenance Service Contracts Prepared with funding from the U.S. EPA
17. A study of the Toyota production system SHIGEO SHINGO STANDARDS
18. EN 13306 Maintenance Terminology. Brussels:
19. EN 15221 Facility management
20. ISO 15686 (2000) Buildings and Constructed Assets – Service Life Planning.
21. ISO 41001:2018 Facility management
22. ISO 14224 Collection and exchange of reliability and maintenance data for equipment
23. ISO 12489:2016 Reliability modelling and calculation of safety systems
24. MIL-STD-3034 RELIABILITY-CENTERED MAINTENANCE (RCM) PROCESS
25. Part 37- Service Contracting FAR System (Federal Acquisition Regulations System)
26. PART 41—Acquisition of utility services FAR System (Federal Acquisition Regulations System)
27. DIN 31051 Fundamentals of maintenance

-Lecture notes

-Workshop material

1.3.2.5 Humanitarian Logistics

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-AEA300	**SEMESTER OF STUDY**	3rd
COURSE TITLE	Humanitarian Logistics		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	ELECTIVE
PREREQUISITE COURSES:	-
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	TBA

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

Logistics/ supply chains play a central role in all humanitarian operations. The fundamental task of a supply chain is to deliver the appropriate supplies, in quality condition, in the right amounts, to the locations at the time that they are needed. However, humanitarian logistics is faced with unique challenges: Humanitarian and non-governmental organizations (NGOs) typically operate in hard environments with limited resources. Their supply chains must be on one hand ready to respond and be deployed within a 72 hours' time-window from the time of a disaster, delivering supplies in order to prevent loss of life and human suffering, under great uncertainty due to disruptions; on the other hand they must be capable to operate longer-term development programs. In both cases, the critical infrastructure, including the transportation and communication systems, may have been severely damaged.

Upon successful completion of the course, the students will be able to acquire skills and up-to-date knowledge in key themes of humanitarian logistics, an extremely interesting topic especially for Hellas, considering the migration/refugees flows the country is facing the last seven years.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case *Adapting to new situations* *Decision-making* *Independent work* *Team work* *Working in an international environment* *Working in an interdisciplinary environment* *Introduction of innovative research*	*Project planning and management* *Respect for difference and multiculturalism* *Environmental awareness* *Social, professional and ethical responsibility and sensitivity to gender issues* *Critical consciousness, criticism and self-criticism* *Development of free, creative and inductive thinking*

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Decision-making
- Team work
- Independent work
- Working in an international environment
- Working in an interdisciplinary environment
- Production of new research ideas
- Production of free, creative and inductive thinking
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

Week	Content
1st	Introduction to humanitarian supply chains
2nd	Humanitarian vs. Commercial logistics
3rd	NGOs and humanitarian organizations – Donations - Partnerships
4th	Knowledge Management-Preparedness
5th	Crisis management and relief operations
6th	Long-term development operations
7th	Fleet Management
8th	Epidemics Logistics
9th	Refugees / migrants camps location
10th	Severity indexes in humanitarian needs assessment

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises. Students will also do group work.

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies will be posted at e-class.

4. TEACHING METHODS - ASSESSMENT

<table>
<tr><td>TEACHING MODE
Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</td><td>In-class lecturing. Face-to-face and online lectures (Greek and English).</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGY
Use of ICT in Teaching, Laboratory Education, Communication with students</td><td>Teaching: Lectures with audiovisual media, support of the learning process through the e-class platform.
Communication with students: Face-to-face at office hours, e-mail, e-class.</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.
The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td><table><tr><th>Activity / Method</th><th>Semester Workload</th></tr><tr><td>Lectures</td><td>30</td></tr><tr><td>Project</td><td>69.5</td></tr><tr><td>Self-study of lecture material</td><td>50</td></tr><tr><td>Counselling</td><td>0.5</td></tr><tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes
Assessment Methods: Course material is posted at e-class during the semester. The final grade of the course is 100% the project’s grade.
Project evaluation criteria are posted on e-class at the beginning of the semester. The groups consist of maximum 3 students. Each project requires research and study of up-to-date literature, writing a text of around 5000 words (in total) and a 15-minute presentation.
In case of failure, in the September re-sits, the grade of the course is formed from a different project.
The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.

Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or e-class. Students have the opportunity to receive explanations about the grade they received.</td></tr>
</table>

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Tomasini, R. & Van Wassenhove, L. (2009). *Humanitarian logistics*. Palgrave MacMillan.
- Zeimpekis, V., Ichoua, S., & Minis, I. (Eds.). (2014). *Humanitarian and relief logistics: Research issues, case studies and future trends* (Vol. 54). Springer Science & Business Media.

-Journals:

- *Journal of Humanitarian Logistics and Supply Chain Management*
- *Production and Operations Management*
- *European Journal of Operational Research*
- *Journal of Operations Research Society*

-Lecture notes

-Case studies

1.3.2.6 Urban (City-Last MIle) Logistics

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΑΣΤ307	**SEMESTER OF STUDY**	C
COURSE TITLE	URBAN/CITY LAST MILE LOGISTICS		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	GENERAL BACKGROUND
PREREQUISITE COURSES:	DISTRIBUTION NETWORKS, BUSINESS ADMINISTRATION
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/BDT300/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to obtain skills and up-to-date knowledge on basic areas pertaining to supply chain management.
The aim of the course is to acquire knowledge in the main thematic sections of City Logistics, and the practices applied at an international level, as well as the evolutions that will exist in the near future

Upon successful completion of the course, the students will be able to:

- be familiar with basic concepts of city logistics
- understand the impact of Urban Logistics on the operation and sustainability of today's urban centers and megacities, as well as on the prospects of modern businesses.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case	*Project planning and management*
Adapting to new situations	*Respect for difference and multiculturalism*
	Environmental awareness
	Social, professional and ethical responsibility and sensitivity to

Decision-making *Independent work* *Team work* *Working in an international environment* *Working in an interdisciplinary environment* *Introduction of innovative research*	*gender issues* *Critical consciousness, criticism and self-criticism* *Development of free, creative and inductive thinking*

The general competences that the student should have acquired and that the course is aimed at are:

- Search for, analysis and synthesis of data and information, in matters of City Logistics.
- Decision-making
- Independent and team work
- Development of free, creative, and inductive thinking
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

- From the distribution of goods in the city, to City Logistics
- Inquiries about the transportation of goods in the city.
- Reduction of pollutant and CO_2 emissions
- Noise pollution and City Logistics
- Optimizing the last mile
- Urban real estate Logistics
- Alternative modes of transport
- The other solutions
- Intelligent transport systems
- The future of City Logistics

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and presentation of case studies. Students will also do group work.

In addition, articles, lecture notes, web addresses, useful information, and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	Face-to-face and online lectures (Greek and English). In-class lecturing. During the lectures, course participants are encouraged to participate in order to increase the level of understanding of the subjects being taught. Following the completion of the thematic unit, a case study is distributed in order to strengthen the understanding of the material and in order for participants to practice in solving real life problems. Between course sessions, participants are required to study in-depth the thematic unit that has been taught using international bibliography articles and the corresponding chapters of the basic manuals.
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform.

<table>
<tr><td></td><td>Communication with students: Face-to-face at office hours, email, skype.</td></tr>
<tr><td>COURSE DESIGN
Description of teaching techniques, practices and methods:
Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.

The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS</td><td>
<table>
<tr><th>Activity / Method</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>30</td></tr>
<tr><td>Study and analysis of bibliography</td><td>30</td></tr>
<tr><td>Project</td><td>60</td></tr>
<tr><td>Self-study of lecture material</td><td>25</td></tr>
<tr><td>Exams (written)</td><td>3</td></tr>
<tr><td>Counselling</td><td>2</td></tr>
<tr><td>Course Total</td><td>150</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 questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc

Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</td><td>Language of exams: Greek & English in Erasmus classes

Assessment Methods: Course material is posted at eclass during the semester. The final grade of the course is as follows:
• 30% of the final grade from the quality and the presentation of the team project
• 70% of the final grade will result from the score on a final example where participants will be asked to complete a test covering the whole of the taught course content, constituted of multiple-choice questions.

Project topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 3-5 students. Each assignment requires research and study of up-to-date literature, writing a text of 5000-7000 words (in total).

In case of failure, the student can participate in the examination period of September.

The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly.

Notification of the Assessment Criteria: The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.</td></tr>
</table>

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- **Raphael Preindl** - *Implementation of Urban Logistics Systems* , 2022 , Springer

- **Giovanni Favero, Michael-W. Serruys, Miki Sugiura** - *The Urban Logistic Network Cities Transport and Distribution In Europe From The Middle Ages To Modern Times*, 2019, Palgrave Macmillan
- **Eiichi Taniguchi, Russell G. Thompson** - *City Logistics 1 _ New Opportunities and Challenges*, 2018, John Wiley & Sons, Inc
- **Eiichi Taniguchi, Russell G. Thompson** - *City Logistics 2 _ Modeling and Planning Initiatives*, 2018, John Wiley & Sons, Inc
- **Eiichi Taniguchi, Russell G. Thompson** - *City Logistics 3 _ Towards Sustainable and Liveable Cities*, 2018, John Wiley & Sons, Inc
- **Aaron Shapiro** - *Design, Control, Predict _ Logistical Governance in the Smart City* – 2020, University of Minnesota Press
- **Anjali Awasthi** - *Sustainable City Logistics Planning Methods and Applications* – 2020, Nova.

-Journals:

- International Journal of Logistics
- International Journal of Logistics Management
- International Journal of Physical Distribution and Logistics Management
- Journal of Business Logistics
- Journal of Supply Chain Management

-Sites

- *http://www.citylogistics.info /*
- *https://globalcitylogistics.org/*
- *https://www.iru.org/*
- *https://civitas.eu/*
- *https://www.polisnetwork.eu/*
- *https://www.eltis.org /*
- *https://www.interregeurope.eu/*
- *http://cyclelogistics.eu/*

-Lecture Notes

1.3.2.7 Digital Transformation and Operations Management

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	Δ-ΨΜΔ302	**SEMESTER OF STUDY**	3rd
COURSE TITLE	DIGITAL TRANSFORMATION AND OPERATIONS MANAGEMENT		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Elective
PREREQUISITE COURSES:	Basic knowledge on Operations Management
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The course aims to help graduates of the MSc as future executives of Logistics and Supply Chain Management departments in using and applying cutting-edge technologies, mainly technologies of the 4th Industrial Revolution, in efficiently managing business operations in complex production/distribution systems.

Upon successfully completing the course, students will be able to effectively manage their companies' business operations using cutting-edge technologies such as the Internet of Things, Artificial Intelligence, Big Data and Analytics and, finally, Distributed Ledger Technologies.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism

Team work *Working in an international environment* *Working in an interdisciplinary environment* *Introduction of innovative research*	*Development of free, creative and inductive thinking*

The general competences that the student should have acquired and that the course is aimed at are:

- *Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case*
- *Adapting to new situations*
- *Decision-making*
- Independent work
- Social, professional and ethical responsibility and sensitivity to gender issues
- Respect for difference and multiculturalism

3. COURSE CONTENT

The course covers the following sections:

Week	Topic
1η -2η	Introduction to Digital Transformation and Operations Management
3η	Industry 4.0 Technologies and Operations Management
4η - 5η	Distributed Ledger Technologies and Operations Management
6η - 7η	IoT-related applications in Operations Management
8η	Big Data Analytics and Operations Management
9η	Artificial Intelligent applications in Operations Management
10η	Assignments presentation-Feedback

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual media, analysis and discussion of scientific texts and experiential (group) exercises.
In addition, articles, audiovisual lecture material, web addresses, useful information, and case studies are posted at e-class.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	In-class lecturing. Face-to-face and online lectures (Greek and English).
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform. **Communication with students:** Face-to-face at office hours, email, e-class
COURSE DESIGN *Description of teaching techniques, practices and methods:* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.* *The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS*	

Activity / Method	*Semester Workload*
Lectures	30
Self-study of lecture material and case studies	104
Assignment	15
Counselling	1
Course Total	***150***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc* *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	**Language of exams:** Greek & English in Erasmus classes **Assessment Methods:** The course syllabus is posted on eclass during the semester. The final grade for the course is 90% based on the assignment and 10% based on the presentation of the assignment at the end of the lectures. In case of failure, in the September re-sits, the grade of the course is formed again 100% from written examination. The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent institution) is performed according to the relevant procedure decided by the Department Assembly. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or e-class. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

Selected papers from scientific journals.

-Journals:

- Management Science
- Journal of Operations Management
- Production and Operations Management
- European Journal of Operational Research
- International Journal of Production Economics
- International Journal of Production Research
- Production Planning and Control
- Journal of Cleaner Production

-Lecture notes

-Workshop material

1.3.2.8 Sustainable and Globalized Supply Chains

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE	L-ΒΠΕ306	**SEMESTER OF STUDY**	3rd
COURSE TITLE	Sustainable and Globalized Supply Chains		

INDEPENDENT TEACHING ACTIVITIES *in case in which credits are awarded for separate components/parts of the course, e.g. in lectures, laboratory exercises, etc. If credits are awarded for the whole of the course, give the weekly teaching hours and the total credits*	**WEEKLY TEACHING HOURS**	**CREDITS**
	3	6
Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.		

COURSE TYPE *general background, special background, specialized general knowledge, skills development*	Scientific Area
PREREQUISITE COURSES:	None
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English in Erasmus classes
COURSE WEBSITE (URL)	https://eclass.unipi.gr/courses/MIS139/

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 qualifications' cycle, according to the European Higher Education Area's Qualification Framework.*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and APPENDIX B*
- *Guidelines for writing Learning Outcomes*

The aim of the course is to describe the phenomenon of global supply chains and the factors that influence their evolution. Teaching focuses on analyzing the environmental impact of supply chain decisions, with particular emphasis on the impact of green transport and new trends in logistics sustainability in the context of increasing urbanization and e-commerce. Particular emphasis is placed on the challenges associated with suppliers from other parts of the world and the responsibility companies have to ensure that their suppliers act in accordance with national and international regulations and corporate social responsibility (CSR) practices. It studies practical alternatives to optimize CO2 emissions using data analysis. It examines "fast" and "green" delivery in the new digital age, the relationship of consumers to sustainable products and services, and the environmental costs of express e-commerce. Finally, it presents CSR principles based on global sustainable governance, international standards, international agreements and initiatives (UN, OECD, EU, ISO 26000, etc.).

Upon successful completion of the course, the students will be able to:

- assess the sustainability of global supply chains,
- identify the opportunities and risks associated with them,

- formulate strategies and proposals for the "greening" of these chains.

They will also master the principles, processes and tools for the sustainable management of supply chains, the use of new anti-pollution and digital technologies to ensure sustainability, as well as the political and institutional framework governing global supply chains.

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 aims

Search for, analysis and synthesis of data and information, by the use of technologies that are necessary according the case
Adapting to new situations
Decision-making
Independent work
Team work
Working in an international environment
Working in an interdisciplinary environment
Introduction of innovative research
Project planning and management
Respect for difference and multiculturalism
Environmental awareness
Social, professional and ethical responsibility and sensitivity to gender issues
Critical consciousness, criticism and self-criticism
Development of free, creative and inductive thinking

The general competences that the student should have acquired and that the course is aimed at are:

- Search, analysis and synthesis of data and information, using the necessary technologies
- Adaptation to new situations
- Decision making
- Independent work
- Teamwork
- Work in an interdisciplinary environment
- Generating new research ideas
- Project planning and management
- Respect for diversity and multiculturalism
- Respect for the natural environment
- Demonstrating social, professional and ethical responsibility and sensitivity to gender issues
- Exercise criticism and self-criticism
- Promotion of free, creative and inductive thinking

3. COURSE CONTENT

The course covers the following sections:

1. Conceptual definitions - Determinants of global supply chains - The international framework for the development and operation of global supply chains
2. The importance and practice of international trade, services and international transport in the development and operation of global supply chains
3. Concepts, actors, models, mapping with examples and effects of global supply chains
4. Global environmental issues, Environmental impacts (positive-negative) of global supply chains
5. Environmental Impacts of the Global Supply Chain: Case Studies I (Recyclable Materials)
6. Environmental impacts of the global supply chain: Case studies II (commodities etc.)
7. Green supply chain management and the role of technology (anti-pollution, energy, digital)
8. The environmental impact of international transport
9. Business models, business practices, corporate social responsibility for sustainable global supply chains
10. The role of international organisations, the EU, nation states and civil society in ensuring sustainability - Regulatory policies and rules for sustainable supply chains (SSCs)

A combination of teaching and learning methods will be used in order to actively involve students and emphasize on the practical application of the topics under consideration: lectures using audiovisual

media, analysis and discussion of scientific texts and exercises. Students will also do individual or group work (2-3 students).

In addition, articles, audiovisual lecture material, web addresses, useful information, exercises and case studies are posted at eclass.

4. TEACHING METHODS - ASSESSMENT

TEACHING MODE *Face-to-face, in-class lecturing, on distance teaching and distance learning etc.*	In-class lecturing, webinars. Face-to-face and online lectures (Greek and English).
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY *Use of ICT in Teaching, Laboratory Education, Communication with students*	**Teaching:** Lectures with audiovisual media, support of the learning process through the eclass platform. **Communication with students:** Face-to-face at office hours, email, eclass.
COURSE DESIGN *Description of teaching techniques, practices and methods:* *Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, clinical practice, Art Workshop, Interactive teaching, Educational visits, project, Essay writing, Artistic creativity, etc.* *The study hours for each learning activity as well as the hours of non- directed study are given according to the principles of the ECTS*	

Activity / Method	*Semester Workload*
Lectures	30
Work preparation	60
Self-study of lecture material	60
Exams (written)	3
Counselling	*1*
Course Total	***154***

STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS *Detailed description of the evaluation procedures:* *Language of evaluation, assessment methods, formative or summative (conclusive), multiple choice questionnaires, short- answer questions, open-ended questions, problem solving, written work, Essay/report, oral exam, public presentation, laboratory work, art interpretation, other……etc* *Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.*	**Language of exams:** Greek & English in Erasmus classes **Assessment Methods:** Course material is posted at eclass during the semester. The final grade of the course is as follows: • 10% from the participation of students in course activities • 20% from writing a paper • 70% of the written exam. The written examination includes the development of a theoretical topic, as well as solving problems/exercises. Assignment topics and evaluation criteria are posted on eclass at the beginning of the semester. Each assignment requires research and study of contemporary literature, writing a text of 3000-5000 words (in total) and a 15-minute presentation. In case of failure, in the September re-sits, the grade of the course is formed in the above-mentioned way. The evaluation of students with special learning difficulties in writing and reading (as certified and qualified by a competent

	institution) is performed according to the relevant procedure decided by the Department Assembly. **Notification of the Assessment Criteria:** The evaluation criteria are made known during the first lecture and are clearly stated on the course website and/or eclass. Students have the opportunity to receive explanations about the grade they received.

5. SUGGESTED BIBLIOGRAPHY

- Bibliography

- David Pierre: Διεθνή Logistics. Η Διαχείριση των Λειτουργιών του Διεθνούς Εμπορίου. Αθήνα 2015: ΠΑΠΑΖΗΣΗ ΕΚΔΟΣΕΙΣ ΑΕΒΕ
- Ozlem Bak: Sustainable and Green Supply Chains and Logistics Case Study Collection, London, United Kingdom, ISBN10 1789668212
- Yann BoucheryCharles J. CorbettJan C. FransooTarkan Tan: Sustainable Supply Chains, Springer
- Mark Millar: Global Supply Chain Ecosystems: Strategies for Competitive Advantage in a Complex, Connected World, 1st Edition, ISBN-13: 978-0749471583
- *For each module, a special bibliography is posted on eclass.*

-Journals:

- Journal of Supply Chain Management
- Logistics
- Journal of Business and Logistics
- Sustainability
- Management of Environmental Quality: An International Journal
- SAGE Open
- Lecture notes
- Workshop material