

COURSE OUTLINE

1. GENERAL INFORMATION

SCHOOL	MARITIME AND INDUSTRIAL STUDIES		
DEPARTMENT	INDUSTRIAL MANAGEMENT AND TECHNOLOGY		
LEVEL OF STUDY	POSTGRADUATE		
COURSE UNIT CODE		SEMESTER OF STUDY	1 st
COURSE TITLE			
INDEPENDENT TEACHING ACTIVITIES <i>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</i>		WEEKLY TEACHING HOURS	CREDITS
Lectures		3	6
<i>Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at section 4.</i>			
COURSE TYPE <i>general background, special background, specialized general knowledge, skills development</i>	Special background		
PREREQUISITE COURSES:	Typically, there are no prerequisites other than those required for admission to the Master's Program. Desirable but not mandatory: basic principles of business administration, basic knowledge of economics, and information technology tools.		
LANGUAGE OF INSTRUCTION and EXAMINATION/ASSESSMENT:	Greek & English (in an ERASMUS class)		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	YES		
COURSE WEBSITE (URL)			

2. LEARNING OUTCOMES

LEARNING OUTCOMES <i>The course learning outcomes, specific knowledge, skills and competences of an appropriate (certain) level, which students will acquire upon successful completion of the course, are described in detail. It is necessary to consult:</i> 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 provide students with a comprehensive and critical understanding of climate change as a multifactorial phenomenon with scientific, social, economic, and political dimensions, as well as a complex and multi-level business risk, with significant regulatory implications for environmental, economic, and social sustainability. The impacts of the climate crisis mainly concern: • infrastructure: high vulnerability to climate-related stresses • supply chain: disruptions in the supply of raw materials and delays in distribution • social cohesion: inequalities in the consequences and in the management of the climate crisis • stakeholders: increased production costs, loss of economic value, and changes in the regulatory environment The course aims to develop students' strategic planning and decision-making skills to enhance resilience and support the transition to a sustainable future. It introduces the theoretical framework of mitigation and adaptation concepts, while focusing on their practical application through case studies, policy tools, and European strategies. The course structure includes: (a) the presentation of climate change as a business

problem (Weeks 1–2), (b) the analysis of its relationship with sustainability (Weeks 3–4), (c) the tools for designing climate action strategies (Weeks 5–6), (d) the analysis of the concept of resilience (Week 7), (e) case studies on addressing the climate crisis (Weeks 8–9), and (f) the analysis of sociopolitical perceptions and actions (Week 10).

Upon successful completion of the course, students will have gained:

- In-depth knowledge of the causes, impacts, and progression of climate change and its transformation into a climate crisis.
- Understanding of scientific data, prediction models, and scenarios related to climate change development.
- Knowledge of international and European strategies (such as the EU Green Deal, the SDGs, and the Sendai Framework).
- Understanding the concept of resilience and its dimensions (ecological, social, economic).
- Knowledge of policies and tools for climate change adaptation and mitigation at different governance levels.
- Understanding of social factors such as inertia, perceptions, and citizen participation.

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

- Manage the interaction of climate change impacts across all aspects of business operations.
- Analyze complex information and integrate it into climate policy design strategies.
- Evaluate the suitability of tools, methodologies, and approaches for developing strategies applicable at the local, regional, national, or international level.
- Identify and manage interdependencies between climate, social, and economic factors.
- Design and evaluate adaptation/mitigation programs and interventions.
- Link scientific findings to policy development.
- Design and develop strategies to enhance the resilience of specific areas or target populations.
- Incorporate the uncertainty of climate models into decision-making for the future.

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 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

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 interdisciplinary environment
- 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

2. COURSE CONTENT

The course covers the following sections:

Wk.	Unit	Sub-unit	Lesson
1	1. Climate Change Data, Scenarios, Policies & Strategies	Introduction: the scientific, social and political framework	1. The shifting of climate change to climate crisis 2. Climate variability and climate change 3. The evolution of the scientific and political field
2		Data, scenarios, policies & strategies	1. Climate change data 2. The systems affected by climate change 3. Climate change economics 4. The strategy to deal with the climate crisis
3	2. Climate Change & Sustainability	Adaptation strategies and building a climate resilient future	1. The response to the climate crisis in the Mediterranean 2. Climate evolution scenarios 3. The case of the Mediterranean Sea 4. Climate change adaptation: the strategic framework
4			5. Population – target 6. Migration models 7. Climate change adaptation actions in the Mediterranean 8. Adopting an integrated approach 9. Applicability issues
5	Designing integrated strategies for climate action	Multilevel governance & coordination of stakeholders	1. From theory to practice: translating scientific data into actionable policies 2. Policy levels: from local to international 3. Tools for designing actions: roadmaps and transition scenarios 4. Climate resilience roadmap
6		Strategic climate policy design	1. The policy cycle for climate change (formulation, implementation, evaluation) 2. Setting goals and success indicators 3. Program design methodology 4. Participatory design: stakeholder and community involvement 5. Synergies between public and private sectors in policy-making
7	Resilience: concept & dimensions	Resilience & Sustainability	1. Relations, correlations & transition 2. Ecological, social & economic dimension of resilience 3. international strategies (UN SDGs, Sendai Framework for Disaster Risk Reduction, EU Green Deal) 4. Transition to Transformational Resilience
8	Climate Change Adaptation Measures	Case studies	1. EU available tools 2. Vulnerability assessments 3. EU on going programs 4. Private Sector's activities 5. Smart solutions to strengthen resilience 6. The situation in Greece
9	Climate Change Mitigation Measures	Case studies	1. Mitigation strategies 2. Sustainable production, development and management 3. City sustainability
10	Perceptions, Inactions, Beliefs	Society & policy	1. The need to prompt action 2. The effects of inactivity 3. Sensitization methods
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 and lectures by distinguished guests. Students will also participate in a team project.			

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

3. TEACHING METHODS - ASSESSMENT

TEACHING MODE <i>Face-to-face, in-class lecturing, on distance teaching and distance learning etc.</i>	In-class lecturing and/or online (via the MS Teams platform)	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY <i>Use of ICT in Teaching, Laboratory Education, Communication with students</i>	Teaching: Lectures with audiovisual media, support of the learning process through the eclass platform and/or MS Teams, use of open-access software. Communication with students: In-person during office hours, by phone, via email, through the eclass platform and/or MS Teams	
COURSE DESIGN <i>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.</i> <i>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</i>	Activity / Method	Semester Workload
	Lectures	30
	Assessment activities (small assignments) / self-assessment	15
	Project	60
	Self-study of lecture and activities material	40
	Exams (oral)	1
	Exams (written)	2
	Counselling	2
STUDENT PERFORMANCE EVALUATION/ASSESSMENT METHODS <i>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</i> <i>Evaluation criteria are specifically defined and given as well as if and where they are reported and accessible to students.</i>	Course Total 150	
	Language of exams: Greek or English (in ERASMUS class) 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 • 40% from the completion of a written group assignment, which is supported orally on the date of the course examination • 40% from the written exams, lasting two hours, with multiple-choice questions and short-answer questions The final grade of the project is 50% from the written text and 50% from the presentation. Project topics and evaluation criteria are posted on eclass at the beginning of the semester. The groups consist of 2-3 students. Each assignment requires research and study of up-to-date literature, writing a text of 3500-4000 words (in total) and a 15-minute presentation. In case of failure, students participate in the September resit period, where the course grade is determined 50% by the completion of an individual assignment and 50% by the written exams. The grade for the assignment is based 50% on the written text and 50% on the presentation of the assignment on the exam date. 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.
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4. SUGGESTED BIBLIOGRAPHY

- Bibliography

- Štreimikienė, D., Mikalauskiene, A. (2021). Climate Change and Sustainable Development: Mitigation and Adaptation, 1st Ed., CRC Press. ISBN-10: 0367550318, ISBN-13: 978-0367550318
- Sabel, C., Victor, D. (2022). Fixing the Climate: Strategies for an Uncertain World. PRINCETON UNIVERSITY PRESS, ISBN: 9780691224558

-Journals:

- Sustainable Production and Consumption
- Sustainable Cities and Society
- Resources Policy
- Ocean & Coastal Management
- Environmental Science & Policy
- Climate Risk Management
- Environmental challenges

-Lecture notes

-Workshop and self-assessment material