

## COURSE OUTLINE

### (1) GENERAL

<b>SCHOOL</b>	Economics and Public Administration		
<b>ACADEMIC UNIT</b>	Economic and Regional Development		
<b>LEVEL OF STUDIES</b>	Undergraduate		
<b>COURSE CODE</b>	800148	<b>SEMESTER</b>	H <sup>7</sup>
<b>COURSE TITLE</b>	<b>Ecological Economics, Circular Economy &amp; Bioeconomy</b>		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>If credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole course, give the weekly teaching hours and the total credits.</i>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
	3	7,5	
<i>Add rows if necessary. The teaching organisation and methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	specialised general knowledge, skills development, general background		
<b>PREREQUISITE COURSES:</b>	No		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS :</b>	Greek & English		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes		
<b>COURSE WEBSITE (URL)</b>	<a href="https://openeclass.panteion.gr/courses/TMI288/">https://openeclass.panteion.gr/courses/TMI288/</a>		

### (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b> <i>The course learning outcomes, specific knowledge, skills and competencies of an appropriate level, which the students will acquire with the successful completion of the course, are described.</i> <i>Consult Appendix A</i></p> <ul style="list-style-type: none"> <li>• Description of the level of learning outcomes for each qualifications cycle, according to the <i>Qualifications Framework of the European Higher Education Area</i></li> <li>• Descriptors for Levels 6, 7 &amp; 8 of the <i>European Qualifications Framework for Lifelong Learning and Appendix B</i></li> <li>• Guidelines for Writing Learning Outcomes</li> </ul>
<p>After completion of this course, students:</p> <p><b>Knowledge:</b></p> <ul style="list-style-type: none"> <li>• have acquired specialised theoretical knowledge of the field of Ecological Economics</li> <li>• have a critical awareness of the criticism of Ecological Economics on the mainstream micro and macro-economic neoclassical theory</li> <li>• have learned to address theoretical models dealing with Steady State Economy, Degrowth and a-growth approaches</li> <li>• have comprehended the alternative to GDP indicator and methodological frameworks</li> <li>• have understand the basic attributes and limitations of the energy system and its interrelation thermodynamics and the entropy law.</li> <li>• Will be able to comprehend complex concepts such as Planetary Boundaries, Doughnut Economics, and the Anthropocene era.</li> <li>• have comprehended the basic aspects and limitations of the European circular and sustainable Bioeconomy Strategies.</li> <li>• have learned, through the written essay, the principles of scientific knowledge management, methods and methodology, and research in the scientific field of ecological economics, circular and sustainable bioeconomy.</li> </ul> <p><b>Competences:</b></p>

- can understand the theoretical models and practical applications in topics such as the complex Economy-Environment-Biosphere interrelation and interdisciplinary concepts such as the Anthropocene epoch.
- can relate empirical data to theories and formulate judgements, which will involve reflection and be linked to the application of their knowledge to the relation between the economy, ecology and the environment.
- can communicate their conclusions derived from their study of development issues, the knowledge and reasoning on which they are based, and the logical assumptions and limitations of their research.
- have the necessary learning skills to enable them to pursue their development studies self-reliant or autonomous.

**Abilities:**

- have the ability to use on-line tools and databases of theoretical and empirical analysis to handle, interpret and propose solutions to the complex and new issues, such as Planetary Boundaries, the Doughnut Economics framework, and the Beyond GDP alternative indicators.
- apply the acquired knowledge and skills with originality and document, inductively and scientifically, logical economic arguments and ideas for dealing with environmental policy implementation, environmental economic tools and methods, and complex interactions of the economy with natural resources consumption and environmental externalities.

**General Competences**

*Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?*

<i>Search for, analysis and synthesis of data and information with the use of the necessary technology.</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>
<i>Decision-making</i>	<i>Respect for the natural environment</i>
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Teamwork</i>	<i>Criticism and self-criticism</i>
<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>
<i>Working in an interdisciplinary environment</i>	<i>Others</i>
<i>Production of new research ideas</i>	<i>.....</i>

- Search for, analysis and synthesis of data and information with the use of the necessary technology.
- Project planning and management
- Working independently
- Teamwork
- Production of new research ideas
- Criticism and self-criticism
- Production of free, creative and inductive thinking
- Adaption in new circumstances
- Respect for the natural environment

**(3) SYLLABUS**

- An introduction to ecological economics and the most important representative of the field
- Analysing the Ends-Means spectrum and the Steady State Economy of Prof. Herman Daly
- The entropic universe of Nicholas Georgescu-Roegen: An introduction to the thermodynamic and entropy economics, the flow-funds production function and the exergy/useful work framework in energy analysis.

- The history of energy use in human societies, from the organic to the fossil economy.
- Current trends in natural resources consumption at the global level. A critical review of the decoupling analysis
- The beyond GDP approach. Presenting the alternative to GDP indicators
- The era of the Anthropocene. Evidence from the Human-Natural Systems
- Quest for limits: from the limits to growth to the planetary boundaries and the doughnut economics
- New trends in the EU strategies on circular and sustainable bioeconomy
- Fundamental micro-macroeconomics in Ecological Economics. A criticism on the mainstream neoclassical economic theory.

#### (4) TEACHING and LEARNING METHODS - EVALUATION

<p style="text-align: center;"><b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i></p>	Face-to-face	
<p style="text-align: center;"><b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, and communication with students</i></p>	<p><i>Use of ICT in teaching, laboratory education, and communication with students</i> <a href="https://openeclass.panteion.gr/courses/PMS222/">https://openeclass.panteion.gr/courses/PMS222/</a></p>	
<p style="text-align: center;"><b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, projects, essay writing, artistic creativity, etc.</i></p> <p><i>The student's study hours for each learning activity are given, as well as the hours of non-directed study according to the principles of the ECTS.</i></p>	<b>Activity</b>	<b>Semester Workload</b>
	Lectures	40
	Seminars	10
	Study and analysis of bibliography	40
	Data Collection and Elaboration – Essay writing	77,5
	Public Presentation	20
	<b>Course Total (25 hours per ECTS)</b>	<b>187,5</b>
<p style="text-align: center;"><b>STUDENT PERFORMANCE EVALUATION</b> <i>Description of the evaluation procedure Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem-solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p><u>Description of the evaluation procedure</u></p> <ul style="list-style-type: none"> <li>• Essay conduction in Greek/English: (50%)</li> <li>• Public Presentation (20%).</li> <li>• Active Participation in the lectures and the relevant dialogues-debates taking place, based on the lecture's material: (20%)</li> <li>• Critical thinking deliverable with extra audiovisual material and papers (10%)</li> </ul> <p><u>Student Performance Evaluation Methods</u></p> <ul style="list-style-type: none"> <li>• Written Essay (Formative, Conclusive)</li> <li>• Written Exam with Multiple Choice and Short Answer Questions (Formative, Conclusive)</li> <li>• Public Presentation (Formative, Conclusive)</li> </ul> <p><u>Communication of the explicitly defined evaluation criteria for students</u></p> <ul style="list-style-type: none"> <li>• In the PSP study guide</li> </ul>	

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|  | <ul style="list-style-type: none"><li>• On the course website<br/><a href="https://openececlass.panteion.gr/courses/TMI288/">https://openececlass.panteion.gr/courses/TMI288/</a></li></ul> |
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## (5) ATTACHED BIBLIOGRAPHY

### - Suggested bibliography:

- Daly, H. E., & Farley, J. (2011). *Ecological economics: principles and applications*. Island press.
- Costanza, R., Perrings, C., & Cleveland, C. J. (Eds.). (1997). *The development of ecological economics* (p. 777). Cheltenham, UK: Edward Elgar.
- Daly, H. E. (2014). *From uneconomic growth to a steady-state economy*. Edward Elgar Publishing.
- Georgescu-Roegen, N. (1971). *The entropy law and the economic process*. Harvard university press.
- Haddad, B. M., & Solomon, B. D. (Eds.). (2023). *Dictionary of Ecological Economics: Terms for the New Millennium*. Edward Elgar Publishing.
- Victor, P. A. (2010). Ecological economics and economic growth a. *Annals of the New York Academy of Sciences*, 1185(1), 237-245.
- Birner, R. (2018). Bioeconomy concepts. *Bioeconomy: Shaping the transition to a sustainable, biobased economy*, 17-38.  
<https://library.oapen.org/bitstream/handle/20.500.12657/27848/1002156.pdf?sequence=1#page=22>
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### Available online- Related scientific journals:

- Journal of Ecological Economics
- Journal of Sustainable Development
- Journal of Bioeconomics
- Journal of Environmental values
- EFB Bioeconomy Journal