Course Title: **NATURAL RESOURCE ECONOMICS and MANAGEMENT**

Module Code: ΟΙ0619-1

Semester of study: 6th and 8th

ECTS: 5,5

Instructor: EFTICHIOS SARTZETAKIS

**Course Outline**

The course provides a general introduction to the field of Environmental Economics and Natural Resource Management. Following a brief introduction on the relationship between Sustainable Development and Economics and the main issues in environmental protection, the course focuses on the management of natural resources. In the introductory lectures the economic approach towards environmental issues is presented. The notions of Property Rights, Externalities, Public Goods, and Common Property Resources are examined and a brief description of Benefit–Cost Analysis and valuation methods is presented. Then we shift into dynamic efficiency and sustainable development. We develop fully a two period depleatable resource management model on which we base the presentation, generalizing to different types of costs, many periods and the presence of a renewable alternative. We then examine in some detail the energy sector (demand, supply and market analysis). We continue with replenishable but depletable resources with emphasis on water management. We also examine the economics of land use and forestry economics. Finally we examine common-pool resources with emphasis on fisheries management. intertemporal

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| Lecture content |
| 1. Introduction |
| 1. Economics and property rights |
| 1. Social choice theory |
| 1. Cost-Benefit Analysis Ι |
| 1. Cost-Benefit Analysis ΙI |
| 1. Dynamic efficiency (intertemporal allocation of depleatable resources) |
| 1. Depleatable resources |
| 1. Energy economics Ι |
| 1. Energy economics ΙΙ |
| 1. Land management |
| 1. Water management |
| 1. Forestry |
| 1. Fisheries |

***Learning Outcomes***

The purpose of the course is to develop students' ability to analyze problems related to the management of natural resources. Emphasis is placed on the applications of analytical tools and models of economic theory to the problems that arise in the management of various types of natural resources. The main learning objectives of the course are for students to:

* Develop critical thinking skills and apply them to the evaluation of resource management decisions.
* Develop an understanding of the role and applications of economics in natural resource management.
* Develop an understanding of the diversity of perspectives toward resources management.
* Develop knowledge of the variety of resource issues in the past, present and future.
* Analyze resources management issues and their relationship to: property rights, externalities, market structure, discount rates, and equity.
* Gain a basic understanding of the economic analysis tools and valuation techniques used in natural resource economics and management.

**Bibliography**

* Choice of textbooks from Evdoxos (in Greek):
* Field B. and M. Field (2020) Εισαγωγή στην Οικονομική του Περιβάλλοντος», Broken Hill Publishers LTD
* Tietenberg, T. and L. Lewis. (2012) Οικονομική του περιβάλλοντος και των φυσικών πόρων (9th Ed.), Pearson Education, Inc.
* Other (apart from the above that originally are in English) suggested readings (in English):
* Larry Karp (2017). Natural Resources as Capital, The MIT Press, London England
* Baumol W.J. and Oates W.E. (1988). The Theory of Environmental Policy, Second Edition, CambridgeUniversity Press, Cambridge.
* Callan, S. J. and J. M. Thomas (1996). Environmental Economics and Management: Theory, Policy and Applications. Irwin: Chicago.
* Field, B. C. and OlewilerN.D. (1994). Environmental Economics: First Canadian Edition., McGraw Hill, Toronto.
* Kahn James R. (1998). The Economic Approach to Environmental and Natural Resources, Second Edition, The Dryden Press, Toronto.
* Pearce, D. W. and R. K. Turner (1990). Economics of Natural Resources and the Environment. New York, Harvester Wheatsheaf.
* Sterner. 2002. Policy Instruments for Environmental and Natural Resource Management, RFF and World Bank
* Ecological Economics textbook:

Costanza R., J. Cumberland, H. Daly, R. Goodland and R. Norgaard (1997). An Introduction to Ecological Economics, St. Lucie Press, Boca Raton, Florida.