Technical University of Crete
School of Environmental Engineering

Postgraduate Studies Program
«ENVIRONMENTAL ENGINEERING»

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<th>Specialization:</th>
<th>3-SEC: ENVIRONMENTAL MANAGEMENT, SUSTAINABLE ENERGY AND CLIMATE CHANGE</th>
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<tr>
<th>Code:</th>
<th>SEC 305</th>
<th>Course:</th>
<th>Environmental Economics &amp; Policy</th>
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<th>Required:</th>
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<th>Elective:</th>
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Instructor: Associate Professor S. Rozakis

Bibliography
1. G. Halkos, 2013. Economy and the Environment, LIBERAL BOOKS publishers (in Greek)

Course objectives
The purpose of this course is to frame an applied methodological approach the economy and the environment appropriate for devising solutions to real environmental problems. Using examples, case studies and exercises, the theoretical foundations of Environmental Economics is presented coupled with a thorough analysis of Environmental interactions to the Economy and Society as well as the sustainable development concept. Course contents thus comprise the epistemological framework, methods of environmental valuation aiming at determining the optimal protection level of the environment. Then the contemporary dimensions of environmental issues follows and ways to cope with through efficient management are analyzed. Main pollution forms in Greece and related policies and actions to satisfactorily constrain them subject to cost minimization.

The second part of the course deals with controversial issues through presenting pros and cons and it is designed to stimulate student interest and develop critical thinking skills. Based on contrasting arguments developed by environmentalists, scientists, and policy makers, debates are organized with students groups elaborating presentations and then pursuing dialogue under strict rules then evaluated by fellow students.

Syllabus
1. Introduction in Resource and Environmental Economics
   Economic principles and alternative approaches (Environmental Economics, Resource Economics & Ecological Economics), Environment and Development (Kuznets’ Curve), Environment and International Trade, Environment and EU Policies

   Definition and raison d’être, Social welfare, resource allocation and market failure. Internalization of externalities (negotiation and the Coase theorem, government intervention)
3. Economic theories for management and natural resource protection
   Objectives and information (optimal pollution level under perfect information), allowable pollution thresholds (imperfect information), incentives [green taxes, tradeable pollution permits, liability rules and the "polluter pays" principle, environmental contracts & cross-compliance). Evaluation criteria (social welfare, control measures, impact allocation) Pareto policy measures, taxes and pollution permits and the time dimension and uncertainty.

4. Environmental impacts estimation
   Hedonic Pricing, Travel Cost Method, Contingent Valuation.

5. Natural Resource management principles
   Renewable resources (soil fertility, forests, fisheries), Non-renewable resources (fossil stocks - Hotelling's rule)

6. Contemporary environmental issues: Taking sides
   Issues studied classify to 4 main sections: Policy and institutional issues focusing on the environment, technology and the environment, waste management, and environment and the future.

Work load
A. Essays
   Each student deploys one's opinions and arguments supporting or demolishing at least two of the issues discussed in the debated in the class. Essays are due the latest before the debates starting moment.

B. Homework in group
   Students forms groups to elaborate arguments on an issue selected by the instructor. Then groups debate against others in an open class session on scheduled dates. Group performance is evaluated by fellow students.

Student evaluation
1. Group work and performance (30%)
2. Essays (30%, 15% each)
3. Final exam (40%)