

## DESCRIPTION OF THE COURSE

Name of the course: <b>Environmental Production Engineering</b>	Code: BIE65	Semester: 8
Type of teaching: Lectures and laboratory work	Lessons per week: L – 2 hours; LW – 1.5 hours	Number of credits: 3

**COURSE STATUS IN THE CURRICULUM:** Compulsory for the students specialty Industrial Engineering BEng programme of the English Language Faculty of Engineering.

**AIMS AND OBJECTIVES OF THE COURSE:** To develop an understanding of the concept and principles of environmental friendly policy, assessments, pollution control and management to the students, and also to give them knowledge to some aspects of existing environmental problems and sustainability.

**DESCRIPTION OF THE COURSE:** The main topics concern: Sustainable development; Basic Concepts, Structure and Function of Ecological Systems; Ecosystems Balance and Change; Air Resources: Atmosphere, Climate & Weather; Renewable Energy Resources; Air Pollution - Global Problems; Air Pollution Control Technologies; Water Resources, Use & Management; Waste Water Treatment; Solid Waste Treatment Management. The result of treatment facilities construction, based on application and optimization of the operation observed in nature and technologies designed into harmony with the natural environment will be production of the end industrial products, included air emissions, waste waters and waste, compatible with the existing environmental resources without overtaxing the assimilative powers of atmosphere, hydrosphere or lithosphere. The purpose of this course is to give students basic knowledge of available technological tools concerning some main topics: - the structure of ecological systems; - the strategy of environmental pollution and protection; - the interaction between the industry and the environment; - the description of major technologies used for pollution control of gaseous, liquid and solid wastes from the industries with sustainable development in mind.

**PREREQUISITES:** Chemistry, Physics.

**TEACHING METHODS:** Lectures, using slides, case studies, laboratory and course work from laboratory, presentation of an environmental problem and defence during discussion.

**METHOD OF ASSESSMENT:** Two Assessment tests (each of them 45%), plus Presentation of an environmental problem (10%) during discussion.

**INSTRUCTIONAL LANGUAGE:** English.

### **BIBLIOGRAPHY:**

1. B. Nebel, Environmental Science, 1990, Prentice Hall Inc., Englewood Cliffs, N.J., 1981;
2. G.Tchobanoglous, L.Burton, Wastewater Engineering: Treatment, Disposal and Reuse, Metcalf & Eddy, N.Y., 1991;
3. G.Tchobanoglous, H.Thiesen, S.Vigil, Integrated Solid Waste Management: Engineering Principles and Management Issues, McGraw-Hill, N.Y., 1993;
4. H.Peavy, D.Rowe, G.Tchobanoglous, Environmental Engineering, McGraw-Hill, N.Y., 1985;
5. H.Bringman, Global Air Pollution: Problems for the 1990's, Belhaven Press, London, 1990;
6. J.Twidell, T.Weir, Renewable Energy Resources, E. & F.N.Spon, London, 1990;
7. M.Hammer, Water and Wastewater Technology, Prentice-Hall International, 1986.