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| Course Code MENG-484 | Course Title Environmental Pollution | ECTS Credits 6 |
| Department Engineering | Semester Fall, Spring | Prerequisites MENG-280,MATH-330 |
| Type of Course Elective | Field Engineering | Language of Instruction English |
| Level of Course 1 st Cycle | Year of Study 4 th | Lecturer(s) Dr Marios Nestoros |
| Mode of Delivery Face-to-face | Work Placement N/A | Co-requisites None |

Objectives of the Course:

The main objectives of the course are to:

- Provide information on the different types of pollutants and their impacts on the humans and the ecosystem.
- Introduce mathematical/statistical models in order to assess the dispersion of pollutants as well as the associated environmental risks.
- Suggest control methods for the different types of pollutants
- Provide information on laws and regulations imposed in order to restrict environmental pollution

Learning Outcomes:

After completion of the course students are expected to:

- Identify among different types of pollutants and their effects on the environment and human beings
- Apply mathematical/statistical models to predict dispersion of pollutants in the ecosystem
- Identify the information and tools required to assess environmental pollution and the related health effects to human and the ecosystem
- Be able to suggest control measures and techniques concerning atmospheric, water or terrestrial pollution challenges.

Course Contents:

- Environmental Ethics
- Environmental Risk Assessment
- Sources of water pollution and monitoring of water quality
- Effect of pollution on lakes, streams and oceans
- Water treatment, wastewater treatment, laws and regulations
- Solid Wastes, their disposal reuse, recycling and recovery
- Air pollutants: sources and health effects
- Meteorology and air pollution

- Dispersion of pollutants in the atmosphere
- Measurement of air quality
- Air pollution Control
- Air pollution Law and Regulations
- Radioactivity and Health Effects
- Sources of Radioactive Waste
- Radioactive Waste management and Regulations
- Noise pollution and control
- Physical Characteristics of sound
- Health effects of sound
- Noise pollution control and regulations

Learning Activities and Teaching Methods:

Lectures, in-class examples and exercises, discussion

Assessment Methods:

Homework, midterm test, final exam, assignments

Required Textbooks/Reading:

| Authors | Title | Publisher | Year | ISBN |
|---|--|------------------------|------|----------------|
| J. J. Peirce, P. A. Vesilind, R. Weiner | Environmental Pollution and Control, 4 th Edition | Butterworth -Heinemann | 1997 | 978-0750698993 |

Recommended Textbooks/Reading:

| Authors | Title | Publisher | Year | ISBN |
|------------------------------------|--|---------------|------|-------------------|
| E. Boeker and R. V. Grondelle | Environmental Physics Sustainable Energy and Climate Change | Wiley | 2011 | 978-0-470-66675-3 |
| K. Wark, C. F. Warner, W. T. Davis | Air Pollution: Its origin and Control, 3 rd Edition | Prentice Hall | 1998 | 978-0673994165 |