COURSE OUTLINE

1. GENERAL

SCHOOL	FACULTY OF ENGINEERING		
DEPARTMENT	ENVIRONMENTAL ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**ΔΠΑΤ**	**SEMESTER**	**9th**
COURSE TITLE	URBAN AIR QUALITY MANAGEMENT		

TEACHING ACTIVITIES *If the ECTS Credits are distributed in distinct parts of the course e.g. lectures, labs etc. If the ECTS Credits are awarded to the whole course, then please indicate the teaching hours per week and the corresponding ECTS Credits.*	**TEACHING HOURS PER WEEK**	**ECTS CREDITS**
	3	5
Please, add lines if necessary. Teaching methods and organization of the course are described in section 4.		

COURSE TYPE *Background, General Knowledge, Scientific Area, Skill Development*	Skill Development
PREREQUISITES:	Atmospheric Chemistry, Atmospheric Physics, Applied Statistics, Mathematics.
TEACHING & EXAMINATION LANGUAGE:	Greek
COURSE OFFERED TO ERASMUS STUDENTS:	NO
COURSE URL:	https://eclass.duth.gr/courses/TMC107/

2. LEARNING OUTCOMES

Learning Outcomes

Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.

1. Knowledge based

- *Understand the fundamentals of Urban Air quality monitoring as a key component of Urban Air Quality Management.*
- *Understand the linkages between the consumption of energy and air pollution.*
- *Understand the methods for Urban Air quality monitoring*
- *Knowledge of the available tools for management and for mitigation strategies of urban air pollution.*

2. Skills / Competences acquired

- *Students will be able to planning, setting up and operating a monitoring campaign, design urban monitoring networks, selecting monitoring equipment etc.*
- *Students will be able to analyze the data, provide reports and propose air pollution mitigation strategies.*

General Skills

Name the desirable general skills upon successful completion of the module

Search, analysis and synthesis of data and information,	*Project design and management*
ICT Use	*Equity and Inclusion*
Adaptation to new situations	*Respect for the natural environment*
Decision making	*Sustainability*
Autonomous work	*Demonstration of social, professional and moral responsibility and*
Teamwork	*sensitivity to gender issues*

Working in an international environment *Working in an interdisciplinary environment* *Production of new research ideas*	*Critical thinking* *Promoting free, creative and inductive reasoning*
Search, analysis and synthesis of data and information, *ICT Use* *Adaptation to new situations* *Decision making* *Teamwork* *Working in an international environment* *Working in an interdisciplinary environment* *Project design and management* *Respect for the natural environment* *Sustainability* *Critical thinking*	

3. COURSE CONTENT

The course provides the fundamental concepts for Air quality monitoring as a key component of Urban Air Quality Management (UAQM). Viewed holistically, UAQM covers the entire process of assessing and tackling air quality problems, from quantification of poor air quality through to formulation and execution of a remediation strategy.

Assessment of the problems is one of the main tasks of ambient monitoring; this will include identification of significant sources of air pollution - such as traffic, industry, domestic, commercial or agricultural - together with 'hotspots' or areas of elevated pollutant concentrations.

Once priority targets are identified, it is possible to systematically evaluate the options available for controlling emissions and improving air quality to an acceptable level. This acceptable level is defined in terms of national or international air quality standards, usually designed to protect population health.

The three main air quality assessment tools are:

- ambient monitoring
- models
- emission inventories/measurement

The ultimate purpose of monitoring is not merely to collect data, but to provide the information necessary for scientists, policy makers and planners to make informed decisions on managing and improving the environment. Monitoring fulfils a central role in this process, providing the necessary sound scientific basis for policy and strategy development, objective setting, compliance measurement against targets and enforcement action.

4. LEARNING & TEACHING METHODS - EVALUATION

TEACHING METHOD *Face to face, Distance learning, etc.*	Face to face
USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) *Use of ICT in Teaching, in Laboratory Education, in Communication with students*	**Use of ICT during teaching and communication with students**
TEACHING ORGANIZATION *The ways and methods of teaching are described in detail.* *Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliographic research & analysis,*	

Activity	*Workload/semester*
Lectures	40

Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive learning, Study visits, Study / creation, project, creation, project. Etc. *The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards.*	Projects	30
	Reading and studying	80
	Class total	150
STUDENT EVALUATION *Description of the evaluation process* *Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay / Report, Oral Exam, Presentation in audience, Laboratory Report, Clinical examination of a patient, Artistic interpretation, Other/Others* *Please indicate all relevant information about the course assessment and how students are informed*	The course is evaluated by written examination (60%) and project presentation (40%).	

5. SUGGESTED BIBLIOGRAPHY

1. E-book « Urban air quality management» G. Loupa, available in the e-class.
2. Papers

ANNEX OF THE COURSE OUTLINE

Alternative ways of examining a course in emergency situations

Teacher (full name):	Glykeria Loupa
Contact details:	gloupa@env.duth.gr
Supervisors:	YES
Evaluation methods:	Written examination with distance learning methods
Implementation Instructions:	The examination in the course will take place on the day defined by the Program of the Department. The topics will be posted in the e-class. In the Word file of the topics that each student will "download", he will write his answers.

	Each of them will post this file in the "Assignments" section of the e-class. This approach is exactly the same as the way students' homework is done. The test will be performed via Teams. The link will be sent΄ to students via e-class exclusively΄ to the institutional accounts of those who have registered for the course and have accepted the terms of the distance examination. Students must log in to the examination room through their institutional account. Otherwise, they will not be able to participate. They will also take part in the examination with a camera which they will have open during the examination. Before the start of the exam, students will show their academic ID to the camera, so that they can be identified. Any question will be asked through a microphone. They should also make sure that the issues are processed on a desktop or laptop and not on a tablet or mobile.