TECHNICAL UNIVERSITY OF CRETE
SCHOOL OF ENVIRONMENTAL ENGINEERING

Code:	ENVE 533	**Course:**	Air Quality Modeling		
Mandatory:		**Elective:**		**Specialization:**	X
Semester	**F** X **S**	**Teaching Units**	3	**ECTS**	5
Teaching Hours per week:	**T** 2	**E** 1	**L**		
Instructors:	M. Lazaridis				
Textbooks (Eudoxus):	Λαζαρίδης Μιχάλης: Ατμοσφαιρική ρύπανση με στοιχεία μετεωρολογίας, 2η έκδοση 2010, Εκδόσεις Α. Τζιόλα & Υιοί Ο.Ε				
Other recommended books:	Σαχσαμάνογλου Χ. Σ., Μακρογιάννης Τ. Ι.: Γενική μετεωρολογία, 1η έκδοση 1998, Ζήτη Πελαγία & Σια Ο.Ε.				
Notes:					
Labs:	**# of lab exercises:**		**Individual Reports**		**Team Reports**
			Lab final written exam		**% of Final Lab Grade**

Final Grade:	**Final Exam**	100 %
	Project	%
	Labs	20 %
	Other ( )	20 %

Course Syllabus:

Vertical structure of the atmosphere, atmospheric boundary layer, chemical composition of the atmosphere. Basic principles of meteorology and atmospheric pollution, atmospheric stability. Atmospheric theories for pollutant dispersion, methods of Euler and Lagrange. Analytical solutions of the atmospheric diffusion equation – Gaussian solutions. New particle formation in the atmosphere. Atmospheric models for chemistry and dispersion. Initial and Boundary conditions. Numerical solutions with finite differences and finite volumes. Chemical kinetics. Applications of atmospheric models. Statistical models of air pollution.