



COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Technology		
ACADEMIC UNIT	Department of Environmental Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	AE802	SEMESTER	8th
COURSE TITLE	HEALTH and SAFETY		
INDEPENDENT TEACHING ACTIVITIES	WEEKLY TEACHING HOURS		CREDITS
Teaching Hours		4	4
COURSE TYPE	Specialised general knowledge		
PREREQUISITE COURSES	None		
LANGUAGE OF INSTRUCTION and EXAMINATIONS	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)	https://eclass.uth.gr/courses/ENV_U_167		

(2) LEARNING OUTCOMES

Learning outcomes
The aim of the course is to provide students with knowledge on the management of health and safety quality of the aquatic and atmospheric environment, focusing particularly on microbiology and the infections related to it. The course also provides knowledge about the microbiology of water from environments of various origins, the pathogenic effect and the way microbes are transmitted to humans, and the preventive measures and ways to deal with water quality control problems. The course incorporates all the current legislation that sets objective quality, hygiene and safety criteria for the aquatic environment and water for human consumption, natural environment water for recreation, and artificial environment water for recreation. It also aims to provide students with knowledge about air pollution, the diseases associated with it and the factors that lead to its increase. In addition, it incorporates guidelines, decisions and Regulations both in Greece and in the European Union concerning air pollution. Upon successful completion of the course, students will be able to: • Analyze the basic principles of water safety in relation to environmental health and safety. • Analyze the chemical and microbiological factors that degrade the water quality of water supply networks and recreational waters, the risks to the health of consumers, and protective measures. • Describe the characteristics of the main micro-organisms in the environment and the most important diseases caused by them. • Analyze issues related to air pollution, toxic compounds, environmental pollution control, and environmental safety management systems. • Analyze the ways of transmission of infectious agents through water and air, and the treatment of possible epidemics.
General Competences
• Adapting to new situations • Decision-making • Working independently • Team work • Working in an international environment • Working in an interdisciplinary environment • Production of new research ideas • Respect for the natural environment • Showing social, professional and ethical responsibility and sensitivity to gender issues • Criticism and self-criticism • Production of free, creative and inductive thinking

(3) SYLLABUS

- Introduction - Definitions.
- Water microbiology-water ecosystems.
- Drinking water quality.
- Quality of recreational waters of the natural environment.
- Quality of bottled water.
- Quality of recreational water in artificial environments (swimming pools, baths, spas).
- Liquid waste.
- Microbial water safety analysis and indicators.
- Bacterial waterborne infections: Salmonella, Shigella, Yersinia, E. coli, Legionella.
- Atypical Mycobacteria, Leptospira, Campylobacter.
- Viral waterborne infections: adenoviruses, astroviruses, Hepatitis A and E viruses, enteroviruses, Norwalk viruses.
- Atmospheric air chemical composition (solar radiation, humidity, wellness zone).
- Air pollution.
- Effects of air pollution on health.
- Prevention of air pollution.

(4) TEACHING and LEARNING METHODS – EVALUATION

DELIVERY	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	• Use of PowerPoint slides • View material in video • Communication with students via e-mail • Use of asynchronous distance learning (e-class)	
TEACHING METHODS	Activity	Semester workload
	Lectures	26
	Laboratory practice	26
	Study and analysis of bibliography	33
	Essay writing	15
	Course total (25 hours workload per credit)	100
STUDENT PERFORMANCE EVALUATION	Students' performance is evaluated in the Greek language. The final grade is determined by: • A written exam (at the end of the semester) that contributes 70% to the final grade, applying one or more of the following evaluation methods: Multiple-choice questions, short-answer questions, problem-solving. • Students' participation in laboratory practice activities during the semester and the preparation and delivery of related assignments, which contribute 30% to the final grade. The assignments may be presented by the students in class. Final Grade = 70% Exam Grade + 30% Assignments Grade	

(5) ATTACHED BIBLIOGRAPHY

- Arvanitidou-Vagiona, M. (2009) *Hygiene*. Thessaloniki: University Studio Press. ISBN 978-960-12-1818-2 (in Greek)
- Farmer, R. D. T., Lawrenson, R., & Miller, L. D. (2010) *Lecture Notes on the Epidemiology and Public Health Medicine*. Athens: Parisianou Publications. ISBN 978-960-394-739-4. (in Greek)
- World Health Organization (2017) *Guidelines for Drinking-Water Quality: Fourth Edition Incorporating the First Addendum*. WHO Guidelines, Approved by the Guidelines Review Committee.