



COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Technology		
ACADEMIC UNIT	Department of Environmental Sciences		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	AY506	SEMESTER	5th
COURSE TITLE	DISEASE ECOLOGY		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
Teaching Hours		4	4
COURSE TYPE	Special background		
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_187		

(2) LEARNING OUTCOMES

Learning outcomes
Disease ecology aims to examine the relationship between pathogens and their hosts, along with the factors influencing this interaction. It describes infectious diseases and their relationship with various populations of humans, animals, and plants, exploring their epidemiology by estimating ecological factors and behaviours. Additionally, it investigates emerging infectious diseases and their relationship with environmental factors. Upon successful completion of the course, students will be able to: <ul style="list-style-type: none">• Understand pathogenic agents and their relationships with hosts.• Identify factors affecting the pathogen-host relationship and transmission methods.• Grasp concepts related to epidemiology and public health, along with their indicators.• Comprehend factors contributing to the occurrence of a disease within a population.• Acquire knowledge about emerging and re-emerging diseases and their association with climate change.• Recognize pathogenic agents related to bioterrorism.• Understand methods for controlling pathogenic agents at the population level.• Develop the ability to assess behavioral and ecological factors influencing the spatial-temporal variation of outbreaks of significant diseases.
General Competences
<ul style="list-style-type: none">• Search for, analysis and synthesis of data and information, with the use of the necessary technology• Decision-making• Team work• Production of new research ideas• Criticism and self-criticism• Production of free, creative and inductive thinking

(3) SYLLABUS

<ul style="list-style-type: none">• Introduction to the relationships between pathogen hosts, microbiota, infection, and pathogenicity.• Relationship between biodiversity and parasitism.• Epidemiology of diseases in natural systems.• Public health. Health indicators. Public health authorities. Epidemiological surveillance.• Diseases transmitted from person to person, diseases from vectors and soil, foodborne and waterborne diseases, zoonoses.• Climate change and diseases. Bioterrorism.• Emerging Infectious Diseases. Introduction to introducing an infectious agent into a population.
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- Management of diseases in a population and preventive measures.
- Disease eradication and control.
- Infectious diseases as biological control agents.
- Case studies analysis.

(4) TEACHING and LEARNING METHODS – EVALUATION

DELIVERY	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	<ul style="list-style-type: none"> • 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	52
	Study and analysis of bibliography	28
	Essay writing	20
	Course total (25 hours workload per credit)	100
STUDENT PERFORMANCE EVALUATION	<p>Students' performance is evaluated in the Greek language. The final grade is determined by:</p> <ul style="list-style-type: none"> • A written exam (at the end of the semester) that contributes 80% to the final grade, applying one or more of the following evaluation methods: Multiple-choice questions and/ or short-answer questions. • Essay writing and presentation that contributes 20% to the final grade. <p>Final Grade = 80% Exam Grade + 20% Assignment Grade</p>	

(5) ATTACHED BIBLIOGRAPHY

- Collinge, Sharon K., & Ray, Chris. (2006) *Disease Ecology: Community Structure and Pathogen Dynamics*. Oxford: Oxford University Press.
- Foufopoulos, Johannes, Wobeser, Gary A., & McCallum, Hamish. (2022) *Infectious Disease Ecology and Conservation*. Oxford: Oxford University Press.
- Hurst, Christon J. (ed.) (2018) *The Connections Between Ecology and Infectious Diseases*, (1st ed). Springer International Publishing AG. HEAL-Link Springer ebooks.
- Kourea-Kremastinou, Jenny (2010) *Public Health*, (2nd edition), Athens: Book Odyssey Publications. (in Greek)
- Pinkerton, Kent E. & Rom, William N. (eds) (2014) *Global Climate Change and Public Health*. New York, NY: Humana Press. HEAL-Link ebooks.