

COURSE OUTLINE

(1) GENERAL

SCHOOL	School of Environment		
ACADEMIC UNIT	Department of Environment		
LEVEL OF STUDIES	Undergraduate		
COURSE CODE	246KEY	SEMESTER	7
COURSE TITLE	Restoration of Polluted Ecosystems		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
Theory-Lectures		2	
Exercises		1	
Total credits			5
COURSE TYPE		Special background	
PREREQUISITE COURSES:		Introduction to Ecology	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:		Greek	
IS THE COURSE OFFERED TO ERASMUS STUDENTS		Yes (tutorials)	
COURSE WEBSITE (URL)		http://www.env.aegean.gr/studies/undergraduate-degree/curriculum/	

(2) LEARNING OUTCOMES

Learning outcomes
Knowledge - To recognize the basic principles of ecological engineering - To describe the mechanisms for aquatic and terrestrial ecosystems restoration Skills - To calculate mass and energy flows through ecosystems - To distinguish the appropriate techniques for ecosystems restoration Competence - To suggest methods for aquatic and terrestrial ecosystems restoration General Competences - Search for, analysis and synthesis of data and information, with the use of the necessary technology - Decision-making - Respect for the natural environment - Team work

(3) SYLLABUS

1. Introduction to ecological engineering
2. Ecosystems
3. Mass and energy flow through ecosystems
4. Basic principles of ecological engineering
5. Lake restoration
6. Lake restoration-case study
7. River and stream restoration
8. Stream restoration-case study
9. Field trip
10. Wetland restoration
11. Wetland restoration – case study
12. Soil bioremediation
13. Soil bioremediation – case study

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	Face to Face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Power point, use of e-mail	
TEACHING METHODS	Activity	Semester workload
	Lectures	24
	Exercises	12
	Team assays	20
	Literature analysis	68
	Field trip	3
	Course total	127
STUDENT PERFORMANCE EVALUATION	Language of evaluation: Greek A. Compulsory final examination (40%) - Multiple choice questionnaires - Short-answer questions - Problem solving B. Compulsory mid-semester examination (40%) - Multiple choice questionnaires - Short-answer questions - Problem solving C. Two team assays (20%)	

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

1. «Ecological Engineering and Ecosystem Restoration», Mitsch, W.J., Jorgensen, S.E., John Wiley &

Sons, Inc., New York, USA. ISBN: 047133264X

2. «Ecological Engineering design: restoring and conserving ecosystem services», Matlock, M.D., Morgan R.A. John Wiley & Sons, Inc., New York, USA. ISBN: 978-0-470-34514-6

3. «Τεχνολογίες αποκατάστασης εδαφών και υπόγειων υδάτων από επικίνδυνους ρύπους», Γιδαράκος, Ε., Αιβαλιώτη, Μ. Εκδόσεις ΖΥΓΟΣ., ISBN: 960-8065-52-6

- Related academic journals:

1. Ecological Engineering, Elsevier

2. Ecological Indicators, Elsevier

3. Restoration Ecology, Wiley

4. Environmental Management, Springer

5. International Biodeterioration & Biodegradation, Elsevier