

Course title	Modelling and optimum environmental management						
Code	ZDOI13						
Study	Ph.D. study of Nature and Environmental Protection						
Semester	II.						
ECTS	5						
Course state	Optional						
Professors	Dr. sc. Sunčana Geček Dr. sc. Tin Klanjšček						
Colaborators	Prof.dr.sc. Tarzan Legović, full professor (retired)						
Entrance conditions	-						
Aim	Familiarizing students with modelling and optimum environmental management						
Learning outcomes	By completing the course students will be able to: 1. manage the dynamics of isolated populations of orgenaisms; 2. analyze prey-predator systems; 3. understand dynamics of competitors; 4. understand dynamics of comensals; 5. understand dynamics of food chains and webs; 6. construct and analyze simpler ecosystem models.						
Connections between students activity, learning outcomes and evaluation	Students activity	ECTS	Learning outcomes	Course activity	Evaluation methods	Points*	
						min	max
	Active participation		1-6	Lectures	Minutes	6	10
	Active participation		1-6	Seminars	Minutes	3	5
	Preparation for the exam		1-6	Problems solving	Exam	4	7
	Total	5				13	22
Consultations	According to the students need						
Teaching form	Lectures		Seminars		Exercises		
No. of hours	15				5		
Content	1. Isolated population of organisms in peaceful, periodic and randomly changing environment; 2. prey-predator system; 3. system of competitors; 4. System of comensals; 5. Food chains and webs; 6. models of ecosystems.						
Compulsory literature	Sharov A. Quantiutative population ecology, 2013 http://alexei.nfshost.com/PopEcol/ Kot. Elements of Mathematical Ecology, Springer, 2001 Murray J.D. Mathematical Biology, Springer, 2002						
Optional literature	May R. , McLead A. (eds.) Theoretical Ecology, Oxford, 2007.						
Completion condition	Active participation in the course						
Exam form	Oral and written						
Possible teaching languages	Croatian or English						
Form of quality monitoring	Minutes of lectures and seminars, student questionnaire.						