Center for Interdisciplinary and Multidisciplinary Studies / / Ecology and biodiversity of aquatic ecosystems

Course:	Ecology and biodiversity of aquatic ecosystems			
Course ID	**Course status**	**Semester**	**ECTS credits**	**Lessons** (Lessons+Exercises+Laboratory)
13757	Optional	1	10	3+2+0
Programs				
Prerequisites	Ecology, Biodiversity and Pollution of Aquaric Ecosystem			
Aims	The aim of the course is to provide students with the necessary knowledge about water ecology, biodiversity, water pollution, consequences of water pollution by water quality criteria, the effect of pollutants on aquatic organisms, aquatic toxicology, water protection legislation, European regulations WFD and National Legislative			
Learning outcomes	Upon completion of this course the student will be able to • Understand the goals and principles of aquatic ecology, spreading of biodiversity • Understand water pollution, consequences of water pollution by water quality criteria • Understand the effect of pollutants on aquatic organisms, aquatic toxicology • Understand water protection legislation WFD (Water Frame Work Directive),etc Transferable / Key Skills and other attributes: • Communication skills: presentations, way of expressing oneself in the written exam. • Teamwork skills			
Lecturer / Teaching assistant	Prof. dr Marijana Krivokapić			
Methodology				
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Interdependence of hydrosphere, atmosphere and lithosphere; Hydrosphere-general data; Hydrological cycle;			
I week exercises				
II week lectures	Natural surface waters. Basic character and composition of natural waters.			
II week exercises				
III week lectures	Inland waters ; Lakes, Rivers, Estuaries; Underground waters; Seas and Oceans			
III week exercises				
IV week lectures	Water as a compound; Complex interactions and changes in the structure of liquid water; Water as an environmental factor, its role and importance			
IV week exercises				
V week lectures	Basic physical and chemical parameters of water and their impact on biota;			
V week exercises				
VI week lectures	Natural water pollution; Water pollution under anthropogenic influence; Classification of pollutants			
VI week exercises				
VII week lectures	Biological effects of organic pollution Bacteria and water pollution; Bacteria as decomposers,; Biochemical oxygen demand; Classification of pollutants by type of pollution			
VII week exercises				
VIII week lectures	Physical water pollution-thermal pollution			
VIII week exercises				
IX week lectures	Chemical water pollution; Accidental environmental pollution of petroleum hydrocarbons, petroleum and its derivatives The fate of oil in water;			
IX week exercises				
X week lectures	Consequences of the effect of the petroleum hydrocarbons and its derivatives on aquatic organisms			
X week exercises				
XI week lectures	Water pollution with Polycyclic aromatic hydrocarbons; polychlorinated biphenyls PCBs; Pesticides; Surface active substances			
XI week exercises				

XII week lectures	Water pollution with heavy metals; Consequences of water pollution by heavy Metals
XII week exercises	
XIII week lectures	Biological pollutants; pollution from biological sources
XIII week exercises	
XIV week lectures	Eutrophication; Structure of trophic levels; Elton Pyramid; law of thermodynamics Saprobity;Auropurification
XIV week exercises	
XV week lectures	WFD - Water Framework Directive and National legislation
XV week exercises	
Student workload	Weekly 3 hours lectures 2 hour tutorial 8 hours and 20min individual work including consultations Total: 13 hours and 20 minutes

Per week	**Per semester**
10 credits x 40/30=13 hours and 20 minuts 3 sat(a) theoretical classes 0 sat(a) practical classes 2 excercises **8 hour(s) i 20 minuts** of independent work, including consultations	Classes and final exam: **13 hour(s) i 20 minuts x 16 =213 hour(s) i 20 minuts** Necessary preparation before the beginning of the semester (administration, registration, certification): **13 hour(s) i 20 minuts x 2 =26 hour(s) i 40 minuts** Total workload for the subject: **10 x 30=300 hour(s)** Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) **60 hour(s) i 0 minuts** Workload structure: **213 hour(s) i 20 minuts (cources), 26 hour(s) i 40 minuts (preparation), 60 hour(s) i 0 minuts (additional work)**
Student obligations	Students are required to attend lectures regularly and to attend all forms of knowledge testing
Consultations	
Literature	References Walter K. Dodds. Freshwater Ecology. Concepts and Environmental Applications, 1-569. Academic Press. 2002. Library of Congress Catalog Number: 2001092383; International Standard Book Number: 0-12-219135-8. Edited by R:S.K. Barnes & K.H.Mann. Fundamentals of Aquatic Ecology, 1-270. Second Edition. Blackwell Science Ltd., 199. ISBN: 978-0-632-02983-9. Krivokapić Marijana, 2008. Uvod u biologiju zagađenih voda, 1-352., priređivač i prvi prevodilac (editor, organizer and first translator); Konkurs Ambasade SAD-a, za prevod stručnih kniga američkih autora (Competition of the USA Embassy, for the translation of professional books by American authors). The title of the original book (naziv originalnog djela): Richard J. Schmitz Introduction to Water Pollution Biology, 1-320 Gulf Publishing Company. Printed in the United States of America. Library of Congress cataloging. ISBN 0-88415-927-2.
Examination methods	• Test/ Exam 70 (30+ 40) • Seminar paper20 • Essay10 • Total 100
Special remarks	The first test after 5th, second test after 10th lectures
Comment	

Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points