Title	**INTRODUCTION TO SCIENTIFIC RESEARCH**
Code	ZDOB01
Study Program	University postgraduate interdisciplinary doctoral study of Nature and Environment Protection
Semester	3
ECTS	6
Status	Obligatory
Lecturer	Associate Professor Branimir Hackenberger Kutuzović, PhD
Co-Lecturers	-
Requirements for Enrolment	-
Objectives	Modern science was developed on the principles of dialectical empiricism and scientific ideas. The experiment, either theoretical or practical, is basis of any scientific work. Therefore, the main objective of this course is to introduce students to review methods and ~~ways~~modes to transform scientific ideas through scientific theory and hypothesis into a scientific experiment, and the methods of interpretation of test results and the creation of new scientific knowledge.
Learning Outcomes	This course gives: 1. a basic knowledge of the theory of science and 2. knowledge needed to connect the theoretical postulates with the practical work. After finishing this course ~~The~~ students will be able to: 3. have an ~~develop theoretical and~~ analytical approach in solving scientific problems and 4. ~~,~~a ~~and~~ statistical approach to design experiments and interpret results. 5. ~~A special chapter will introduce students into the principles of~~Independently write~~ing~~ a good research paper.

Connection between Learning Outcomes, Curricular and Student Activities

Student Activities	ECTS	Learning Outcomes	Curricular Activities	Methods of Assessment	Credits*	
					min	max
Attendance at lectures	1	1-3~~,2,32~~	Lectures	Record of attendance	1	5
Attendence of practice	1		Practice	Record of attendance	1	5
Attendance at seminar	1	3-5~~,4,5~~	Seminars	Record of attendance and seminar	1	10
Preparation for oral exam	3	1-5	Oral exam	Oral examination	2	30
Total	**6**				**5**	**50**

Consultations			
Learning Activities	**Lectures**	**Seminars**	**Practice**
Hours	15	10	~~-~~3
Contents / Teaching Units	Knowledge and science. Classical empiricism, transcendental idealism and transcendental realism. Detection and description of the phenomenon. Causality, actualism, determinism. The paradigm of action. Open and closed systems. Scientific theories and hypotheses. The scientific logic. Deterministic and stochastic systems. Reductionism and holism. The role and importance of statistics. The statistical principles of experimental design. Theoretical experiments. Experiments in the		

	laboratory. Experiments in the environment. Foreseeable and unforeseeable errors and noise. Interpretation of results. Hypotheses and theories. Stability results. Principles of publishing scientific papers. Sources of scientific papers. Methods of writing and presentation.
Obligatory Literature	Bhaskar R. 2008. Routledge, A Realist Theory of Science, Taylor & Francis, NY Vujević M. 2006. Uvođenje u znanstveni rad, Školska knjiga. Zagreb Šolić M. 2005. Uvod u znanstveni rad, Sveučilište u Splitu, Split RBI, Baze podataka za istraživačku i akademsku zajednicu. http://www.online-baze.hr/baze
Recommended literature	Simonić A. 2005. Znanost – najveća avantura i izazov ljudskog roda, Medicinska Naklada, Zagreb
Requirements for Aquiring Signature	
Type of Exam	Oral exam with written seminar.
Lectures Language	Croatian, but can be organised in english.
Quality Monitoring	Publicaly available student seminar.