

Study program	Level of studies		Third cycle	
	Title of the study program		Doctoral studies in physics	
Course title	METHODOLOGY OF SCIENTIFIC RESEARCH IN PHYSICS			
Course ID	Semester	Course status	ECTS credits	Teaching hours
PTH7001	I	Mandatory	10	30
Course aims and expected learning outcomes	Students become familiar with the basis of methodology in scientific research work and statistics in physics research. Students master basis of scientific writing.			
COURSE CONTENT				
<p>Why and how to perform the research in physics.</p> <p>Scientific procedure, difficulties in engaging in scientific research work in physics.</p> <p>Preparations before research, research design, sample, hypothesis.</p> <p>Types of scientific research by level and purpose, research projects, preliminary research.</p> <p>Statistics in physics research, summarizing and presentation of the results, and choice of statistical methods.</p> <p>Basic information on scientific writing.</p> <p>Categorization of publications.</p> <p>Authorship and co-authorship.</p> <p>Preparing to write a publication, write a review, write a professional article, send a manuscript to a journal, respond to an editor's decision.</p>				
LITERATURE			ASSESSMENT OF LEARNING	
Mandatory literature: - Vlatko Silobrčić, <i>Kako sastaviti, objaviti i ocijeniti znanstveno djelo</i> , HAZU, Zagreb, 2010.  - Zoran V. Popović, <i>Kako napisati i objaviti naučno delo</i> , drugo izdanje, Akademska misao, Beograd i Institut za fiziku, Zemun, 2004.  Broader literature: - Midhat Šamić, <i>Kako nastaje naučno djelo, Uvođenje u metodologiju i tehniku naučnoistraživačkog rada – opći pristup</i> , IX izdanje, IP „Svjetlost“ Sarajevo, 2003.  - Herbert L. Hirsch, <i>Essential communication strategies for scientists, engineers, and technology professionals</i> , John Wiley & Sons, New Jersey, 2003.			Assessment Method	Points
			Homework	20
			Seminar papers	40
			Final exam	40
			Total	100
Remarks				