

## COURSE DESCRIPTION

General information		
Lead instructor	Associate Professor Zoran Levnajić, Professor Ivana Ogrizek Biškupić	
Course name	<b>CDS-01: Introduction to Scientific Research</b>	
Study programme	<b>Computer and Data Science, third cycle Doctoral Study Programme</b>	
Course status	Mandatory	
Year	First	
Number of credits and mode of delivery	ECTS student workload coefficient	10
	Number of hours (L+P+S)	10/20/270

Course description
<i>1.1. Course goals</i>
<p>The ultimate goal of this course is a well written and publicly presented dissertation proposal. This course is intended for the student to present the doctoral research plan to be confirmed by the faculty.</p> <p>The draft is to be presented in front of other students (peers). Students will have the chance to interact as peers and assess each other. Based on the above, the student prepares the final version of the dissertation proposal and officially submits it to the faculty.</p> <p>In parallel to this, students learn about scientific research and other general issues regarding their doctoral studies:</p> <ul style="list-style-type: none"> <li>- Examples of scientific research in everyday life. Types of real scientific research</li> <li>- Discovery-driven vs. Methodological research</li> <li>- Various schemes of research</li> <li>- What is a good research problem and what is not? How to choose the doctoral topic? How to choose an adviser?</li> <li>- Collecting and reading scientific literature. How and what to read?</li> <li>- Formalizing and articulating a research problem. How to motivate a research problem?</li> <li>- How do we solve research problems: scientific methodology.</li> <li>- Main research methodologies</li> <li>- What is “the method” for a methodological doctorate?</li> <li>- Presenting research results. Why are we presenting them? To whom? How?</li> <li>- Scientific writing. Style and language.</li> <li>- How to write a (traditional) research paper? Standard IMRaD structure.</li> <li>- How to write a methodological paper?</li> <li>- How to submit a paper? Life-cycle of a scientific manuscript.</li> <li>- Scientific journals. Ranking of journals, impact factor.</li> </ul>

<ul style="list-style-type: none"> <li>- International scientific conferences.</li> <li>- Research financing. How to write a research proposal?</li> <li>- How to write a dissertation proposal? How to present it?</li> <li>- Peer-reviewing work of other people. How much criticism?</li> </ul>							
1.2. Course enrolment requirements							
Enrollment in the first year of studies							
1.3. Intended course learning outcomes							
<p>Knowledge and understanding:</p> <p>The student:</p> <ul style="list-style-type: none"> <li>- understands the theory and practice of the creative process in connection with the dissertation proposal,</li> <li>- prepares the draft and ultimately the final version of the doctoral dissertation proposal,</li> <li>- gets a clearer picture of continuing his/her doctoral studies,</li> <li>- becomes familiar with the ways scientific research works.</li> </ul>							
1.4. Course content							
<p>Learning unit contributes to development of the following general competencies:</p> <ul style="list-style-type: none"> <li>- Ability to identify a research problem, analyze it, and offer possible solutions</li> <li>- Ability for independent research- development work and leadership of a research group</li> <li>- Familiarity with the notion of quality and strive for professional quality through autonomy, (self-) criticism, (self-) reflection and (self-) evaluation</li> <li>- Commitment to professional ethics</li> </ul> <p>and subject-specific competencies:</p> <ul style="list-style-type: none"> <li>- Ability to present the obtained scientific results in the form of publications in international scientific journals</li> <li>- Skills in scientific writing and the ability to present obtained results in the relevant research field</li> <li>- Understanding the dynamics of publishing scientific results at the international level</li> </ul>							
1.5. Modes of delivery (mark the appropriate boxes with an X)		<input checked="" type="checkbox"/> lectures <input type="checkbox"/> seminars and workshops <input checked="" type="checkbox"/> practicals <input type="checkbox"/> remote learning <input type="checkbox"/> field work			<input checked="" type="checkbox"/> independent work <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervision <input type="checkbox"/> other _____		
1.6. Student obligations							
1.7. Monitoring student work (mark the appropriate boxes with an X)							
Class attendance		Participation in class		Seminar paper		Experimental work	
Written exam		Oral exam		Essay		Research	

Project		Continuous assessment of knowledge		Student report		Practical work	
Portfolio		Schoolwork		Homework			
<i>1.8. Assessment and evaluation of student work during classes and the final exam</i>							
Type (examination, oral, coursework, project): - Prepared, presented and submitted doctoral dissertation proposal, 100%							
<i>1.9. Required readings and number of copies relative to the number of students currently taking the course</i>							
<i>Title</i>				<i>Number of copies</i>		<i>Number of students</i>	
Brown, G. (2021). How to Get Your PhD: A Handbook for the Journey. Oxford University Press.							
Blair, L. (2016). Writing a Graduate Thesis or Dissertation. Springer.							
Examples of past dissertations and approved dissertation proposals							
<i>1.10. Supplementary readings</i>							
<i>1.11. Methods of quality monitoring that ensure the acquisition of knowledge, skills and competences.</i>							