

Study program: MAS Subject Teaching (Electrical and Computing Engineering; Mechanical Engineering)				
Type and level of studies: Master				
Course unit: RESEARCH METHODOLOGY AND SCIENCE COMMUNICATION				
Teacher in charge: Dragana Bjekić				
Language of instruction: English				
ECTS: 6				
Prerequisites: /				
Semester: Winter				
Course unit objective – Introduction into the system of sciences and scientific and applicative research. Developing students research approaches and skills, communication in the research environment and project team.				
Learning outcomes of Course unit – Students functionally explain and analyze research procedures, project and results, and use resources of information adequately; develop consistent conclusion based on the data; write critical review of the relevant literature; make a research plan; apply experimental procedures, understand statistical data processing, select research procedures, and write scientific reports, articles/papers; present and discuss research results; maintain the research ethics.				
Course unit contents				
<i>Theoretical classes:</i> Introduction into the research method and science. The basis of research. Ethical framework of the scientific research. The resources of the scientific data, information systems, data base: assessment of the resources.				
General methodology of the research and phases of the research. Specificity of the research in the engineering domain. Differences between fundamental and applicative research. Design of the research. Problem of research. Organization of the scientific research. Measurement and selection of the data. Data processing. The basics of Statistics. Systematization and presentation of the results. Report.				
Writing of the scientific research papers and criteria for the paper evaluation. Citing, authors right, copyright. Scientific communication. Presentation, conference, workshop. Project presentation. Research and project management				
<i>Practical classes:</i> Selecting relevant publication, searching for data bases and selection. Research design and plan. Skills of team work and communication in the professional environment. Project development. <i>Work in pairs and groups simulating meetings; chairing, running and participation.</i>				
Literature				
Kuhn, T. S. (1996). <i>The Structure of Scientific Revolutions</i> , Chicago: University of Chicago Press.				
Nentwich, M. (2004). <i>Cyberscience: Research in the Age of Internet</i> , Austrian Academy of Science.				
Neuman, W. L. (2006). <i>Social Research Methods: Qualitative and Quantitative Approaches</i> , Boston: Pearson International Edition.				
NIST/SEMATECH. <i>e-Handbook of Statistical Methods</i> , http://www.itl.nist.gov/div898/handbook/				
Shulman, M. (2005). <i>In FOCUS: Strategies for Academic Writers</i> , Michigan: University of Michigan.				
Vargas-Quesada, B., de Moya-Anegon, F. (2007). <i>Visualizing the Structure of Science</i> , Berlin-Heidelberg-New York: Springer.				
Number of active teaching hours				
Lectures: 2	Practice:1	Other forms of classes: <i>mentoring and monitoring – 1</i>	Independent work	Other classes
Teaching methods –e-course,				
Examination methods (maximum 100 points)				
Exam prerequisites	No. of points:	Final exam	No. of points:	
Student's activity during lectures	15	oral examination	15	
practical classes/tests	15	written examination	15	
Seminars/homework	20		
Project	20			
Other				
Grading system				
Grade	No. of points	Description		
10	91-100	Excellent		
9	81-90	Exceptionally good		
8	71-80	Very good		
7	61-70	Good		
6	51-60	Passing		
5	Less than 51	Failing		