

Study programme(s): Computer science			
Level: Master academic studies			
Course title: Research methods			
Lecturer: Zoran D. Budimac			
Status: obligatory			
ECTS: 7			
Requirements: none			
Learning objectives Presentation and development of concepts, organizational structure, and deliverables of research project using qualitative and quantitative methods. The high level of understanding and appreciation of different ways of organization, planning, implementation and guiding technical projects.			
Learning outcomes <i>Minimum:</i> It is expected that every student is able to communicate and formulate problems in the framework of a research project, ability to prepare, plan and follow a technical research project, as well as to know tools and possess skills for critical evaluation and analysis of projects. <i>Desirable:</i> It is expected that a successful student will be able to choose and assess adequate research methods while collecting data. The student is also expected to demonstrate knowledge and experience in approaches and methods for structuring, collecting and processing of information in technological development.			
Syllabus <i>Theoretical instruction</i> Theoretical approaches to project and its management, quality management, communication skills, presenting skills, literature survey and review, patent survey, writing of technical reports and papers. Theoretical basics of research methods, problem analysis and techniques for solutions, structuring methods, qualitative methods for system analysis, process and performance assessment. Quantitative methods for collection and analysis of data, experimental design and data collection, performance analysis, deviation analysis. Plagiarism, references, health and security aspects of research. <i>Practical instruction</i> Rehearsal of covered skills and methods on case studies using some of the software tools for project management.			
Literature <i>Recommended</i> 1. CLELAND & KING Project management handbook 2nd edition, van Nostrand Reinhold. 2. LAMERS & ARNOLD, Report writing for science, technology and management, Wageningen Agricultural University, 1990. 3. MONTGOMERY DOUGLAS C, introduction to statistical quality control 2nd edition, John Wiley and Sons. 4. STRAKER DAVID, A toolbook for quality improvement and problem solving, Prentice Hall, 1995			
Weekly teaching load			
Lectures: 3	Exercises: 1	Practical Exercises: 1	Student research: Other:
Teaching methodology Lectures are organized using classical methods and overhead projector. During exercises, case studies are analyzed and certain skills and methods are rehearsed. Students upgrade their knowledge by researching some of the offered topics and write seminar papers that will be presented at the end of the course.			
Grading method (maximal number of points 100)			
Pre-exam obligations	points	Final exam	points
Assignments	60	Oral exam	40