RTU Course "Research Methods and Technical Writing"

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General data

Code	DSP718
Course title	Research Methods and Technical Writing
Course status in the programme	Compulsory/Courses of Limited Choice
Responsible instructor	Agris Ņikitenko
Volume of the course: parts and credits points	1 part, 3.0 credits
Language of instruction	LV
Annotation	Modern society is being moved toward a knowledge-based model within which innovative solutions are created that can be applied to enhance the economy. However, innovative solutions can also be created by synthesizing existing knowledge. Scientific methods have been designed and are applied specifically for this purpose, therefore being familiar with such methods should be of benefit to students of any engineering science program. The main subject of the study course is the introduction to and practical application of scientific methods that can be used in computer science research. Given that some of the students may not be familiar with the concept, the course presents the types of scientific methods and possibilities of application thereof. Quantitative and qualitative scientific methods are considered, the research process and its various steps are analysed, and the stages of drafting a scientific publication are set out. To ensure a more efficient learning process, theoretical studies are complemented with a realistic research project of a nominal volume; the results of this project shall be presented in a written report. A number of lectures are dedicated to honing technical writing skills that can be applied to drafting course and final papers.
Goals and objectives of the course in terms of competences and skills	The aim of the study course is to acquaint students with the basics of technical and scientific writing, as well as to provide sufficient skills for students to be able to prepare technical documents independently. The tasks of the study course are to provide: - knowledge about the research process, the main research activities and the results to be obtained; - knowledge about the research methods to be used in IT research and management research, scientific writing techniques and standards; - skills to find the most suitable methods for specific research; - skills to conduct research in accordance with the generally accepted research process in science, as well as to prepare the research report in accordance with generally accepted technical norms.
Structure and tasks of independent studies	The assignments are planned as an integral part of the study course. Every theoretical topic has an associated practical exercise that should be performed by student individually.
Recommended literature	Obligātā/Obligatory: Research methods in information / Alison Jane Pickard London: Facet Publ., 2007. Research methods for business students / Mark Saunders, Philip Lewis, Adrian Thornhill.Harlow, England; New York: Financial Times/Prentice Hall, 2007. Research methodology: a step-by-step guide for beginners / Ranjit Kumar. London; Thousand Oaks; New Delhi : SAGE, 2005.
Course prerequisites	No special requirements defined.

Course contents

Content	Full- and part-time intramural studies		Part time extramural studies	
	Contact Hours	Indep. work	Contact Hours	Indep. work
Introduction: Research methods basics; Research process.	2	4	0	0
Classification of the research methods, quantitative and qualitative research methods.	2	4	0	0
Quantitative methods for data acquisition, analysis and processing.	8	12	0	0
Technical writing (design, structure, bibliographic standards).	8	12	0	0
Results of the research: form, structure and standards.	4	4	0	0
The process of the research paper and master thesis development.	8	12	0	0
Total:	32	48	0	0

Learning outcomes and assessment

Learning outcomes	Assessment methods
Knows the research process, main activities, results.	Practical work: successfully completed the plan of the development of the master thesis.
Knows the research methods used in IT research.	Practical work: successfully completed analysis of the research methods applicable in the student’s master thesis. Exam questions.

Knows research paper development techniques and standards.	Practical work: successfully completed analysis of the research papers. Exam questions.
Can find the most appropriate methods for the particular research.	Practical work: successfully completed exercises. Exam questions.
Can do research according to the generally accepted methods, standards and techniques.	Practical work: successfully completed exercises.
Can present the research results according to the generally accepted technical requirements.	Practical work: technically correctly presented research results.

Evaluation criteria of study results

Criterion	%
Independent practical work	80
Exam	20
Total:	100

Study subject structure

Part	CP	Hours			Tests		
		Lectures	Practical	Lab.	Test	Exam	Work
1.	3.0	2.0	0.0	0.0		*	