

RTU Course "Introduction to Applied Computer Science"

12306 Department of Applied Computer Science

General data

Code	DPI348
Course title	Introduction to Applied Computer Science
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Academic
Field of study	Computer Science
Responsible instructor	Oksana Nikiforova
Volume of the course: parts and credits points	1 part, 2.0 Credit Points, 3.0 ECTS credits
Language of instruction	LV, EN
Annotation	Students become familiar with scientific research methods and get an information about the requirements and best practices of presentation of research results, which are used for development of the first scientific research during Bachelor studies - Bachelor Thesis. Lectures present information about what scientific research is, what its main components are, how to use sources of scientific bibliography, how to use scientific ideas and results of scientific research offered by other authors, how to apply scientific method for Bachelor level research and how to present own results during defense of the Bachelor Thesis. Practical lessons give students a possibility to report on the stage of Bachelor studies research and to present a new result of the research and/or update an old result. Tasks are directed to the application of theoretical information for practical approbation of the received knowledge to develop parts of pilot research and to present intermediary results of scientific research.
Goals and objectives of the course in terms of competences and skills	The goal is to gain experience in performing scientific research in the field of applied computer science. Objectives: - to learn to define the research object, research area, goal and tasks of the research and to explain an essence of components of scientific research.; - to learn to work with scientific literature and select appropriate information sources; - to learn to perform scientific research, using scientific research methods, and to describe results in scientific language; - to learn to prepare presentation about the research performed, to present it and to participate in scientific discussion.
Structure and tasks of independent studies	Students work individually and in teams, performing the research on the defined topic and discussing the results achieved at different stages of scientific project.
Recommended literature	WILSON, E. Bright. An introduction to scientific research, McGraw-Hill, 1952. NIKIFOROVA, Oksana, STRAZDINA, Renate, KIRIKOVA Marite. Bachelor Level Research Methodology in the Field of System Engineering, Joining Forces in Engineering Education Towards Excellence Proceedings, Szentirmai, Szarka T.G. Eds., Publisher: University of Miskolc, Press: EURO TEAM Studio Bt., SEFI and IGIP Joint Annual Conference, Miskolc, Hungary, abstract in Book of Abstracts at pp. 283-284, paper at CD - p. 10, 2007 Supervising and Being Supervised: A Practice in Search of a Theory. WIENER, Jan, MIZEN, Richard, DUCKHAM, Jenny (Eds). Palgrave Macmillan, 2003, p. 272. The Delphi Method. Techniques and Applications. Linstone, H. & Turoff, M. (eds.), Massachusetts: Addison-Wesley, 1975. Bolker J. Writing Your Dissertation in Fifteen Minutes a Day. A Guide to Starting, Revising, and Finishing Your Doctoral Thesis. Holt Paperbacks, H. Holt & Company, LLC. 1998
Course prerequisites	None

Course outline

Theme	Hours
Course introduction and requirements.	2
Essence, phases and components of scientific research.	4
Information gathering, observing, working with scientific literature.	4
Scientific research methods. Essence of scientific research in computer science.	8
Summarizing and presentation of scientific research results. Scientific writing.	8
Presentation making, essence of scientific result presentation.	6

Learning outcomes and assessment

Learning outcomes	Assessment methods
Is able to define the research object, research area, goal and tasks of the research and to explain an essence of components of scientific research.	The instructor checks task performance
Is able to work with scientific literature and select appropriate information sources.	The instructor checks task performance
Is able to perform scientific research, using scientific research methods, and to describe results in scientific language.	Students evaluates results achieved by other students

Is able to prepare presentation about the research performed, to present it and to participate in scientific discussion.	Student evaluates presentations demonstrated by other students
Is able to demonstrate the knowledge acquired within the scope of the course by answering questions and solving practical tasks.	Examination

Study subject structure

Part	CP	Hours per Week			Tests		
		Lectures	Practical	Lab.	Test	Exam	Work
1.	2.0	1.0	0.0	1.0		*	