1.	Course Title	Research methodology in ICT
2.	Code	F18L3W126
3.	Study program	Software engineering and information systems
4.	Study Program Organizer	Faculty of Computer Science and Engineering
5.	Degree (first, second, third cycle)	first cycle
6.	Academic year / semester 4 / winter / mandatory	7. ECTS credits 6
8.	Teacher	Ph.D. Andreja Naumoski, full professor Ljupcho Kocarev
9.	Course enrollment prerequisites	освоени минимум 150 кредити

10. Course program goals (competencies):
 The aim of the course is for students to become familiar with the basics of research methodologies in ICT. Upon completion of the course, candidates will have a deeper knowledge of ICT research methodologies, can conceive and conduct scientific research, and write a report on scientific research.

11. Course program content:
 Introduction to ICT research methodology. Phases in the research. First phase - planning to be explored. Second phase - planning the research. Third phase - implementation of the research. Basic concepts in computer science: computing, complexity, systems, information. Modern trends in computer - networks, connectivity, open data, related data, data science, machine learning, artificial intelligence. Conclusion - ICT technologies

12. Learning methods:
 Lectures using presentations, interactive lectures, exercises (using equipment and software packages), teamwork, case studies, invited guest lecturers, independent preparation and defense of a project assignment and seminar work.

13.	Total available time		6 ECTS x 30 hours = 180 hours	
14.	Distribution of the available time		30 + 45 + 15 + 15 + 75 = 180 hours	
15.	Teaching activity forms	15.1.	Lectures – theoretical teaching	30 hours
		15.2.	Exercises (laboratory, auditory), seminar papers, teamwork	45 hours
16.	Other activity forms	16.1.	Project Tasks	15 hours

		16.2. Independent Learning Tasks	15 hours	
		16.3. Home learning	75 hours	

17.	Assessment methodology	
	17.1. Tests	10 points
	17.2. Seminar paper/project (presentation: written and oral)	10 points
	17.3. Activity and learning	10 points
	17.4. Final exam	70 points

18.	Assessment criteria (points/grade)	up to 50 points	5 (five) (F)
		51 to 60 points	6 (six) (E)
		61 to 70 points	7 (seven) (D)
		71 to 80 points	8 (eight) (C)
		81 to 90 points	9 (nine) (B)
		91 to 100 points	10 (ten) (A)

19.	Course completion and final exam requirements	Realized activities 15.1 and 15.2
20.	Teaching Language	Macedonian and English
21.	Teaching quality evaluation method	Internal evaluation mechanisms and questionnaires

22.	Course Material				

22.1. Mandatory course material

No.	Author	Title	Publisher	Year
1	Ranjit Kumar	Research Methodology	SAGE Publications	2011
2	Luciano Floridi	The Blackwell Guide to the Philosophy of Computing and Information	Blackwell Publishing	2004

22.2. Additional course material

No.	Author	Title	Publisher	Year