1.	Course Title	Integrated Systems
2.	Code	F18L3S012
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 3 / summer / optional	7. ECTS credits 6
8.	Teacher	associate professor Ivan Chorbev
9.	Course enrollment prerequisites	Анализа и дизајн на софтверски барања или Софтверско инженерство
10.	Course program goals (competencies): After completing the course, it is expected for students to be able to design, select, implement and manage enterprise IT solutions. To be capable of working in a corporate environment while implementing and maintaining enterprise IT solutions. To be capable of developing strategies for technological architectures of complex software systems serving wast amounts of data, many users and wide specter of business processes.	
11.	Course program content: This course explores the design, selection, implementation and management of enterprise IT solutions. The focus is on applications and infrastructure and their fit with the business. Students learn frameworks and strategies for infrastructure management, system administration, data/information architecture, content management, distributed computing, middleware, legacy system integration, system consolidation, software selection, total cost of ownership calculation, IT investment analysis, and emerging technologies. These topics are addressed both within and beyond the organization, with attention paid to managing risk and security within audit and compliance standards. Students also hone their ability to communicate technology architecture strategies concisely to a general business audience. (1) Introduction to integration of IT systems (enterprise architecture frameworks). (1) Types of system integration (software, hardware). (1) Enterprise data models, Data / information architecture and data integration. (1) Data / information architecture and data integration (methodologies). (2) Introduction to data warehouses, ETL and data manipulation. (2) Technologies for system integration (XML, SOA, Web Services, COTS). (1) Virtualization, Cloud, Software as a Service, Open Source. (2) Enterprise Resource Planning Systems and business process models. (1) Management of risks, total cost of ownership and return of investment, revision and standards. (1) IT strategy and metrics, Emerging technologies, System administration	
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	Scott A. Bernard	An Introduction To Enterprise Architecture: Third Edition	AuthorHouse	2012
	2	Minoli, D	Enterprise architecture A to Z: Frameworks, business process modeling, SOA, and infrastructure technology.	Auerbach. Regis Library	2008
	3				0

22.2. Additional course material

No.	Author	Title	Publisher	Year