

1.	Course title	IPTV services and technologies		
2.	Course code	KMET-I-16		
3.	Study program	Computer networks and e-technologies		
4.	Unit offering the course	FCSE		
5.	Undergraduate/master/PhD	Master		
6.	Year/semester 1(2)/winter/elective	7. ECTS: 6		
8.	Teacher(s)	Assist. Prof. Sonja Filiposka		
9.	Course prerequisites	None		
10.	Goals (competences): The aim of the course is to prepare the student for development, design, implementation and support of end-to-end IPTV systems and digital video services.			
11.	Course content: Digital TV systems and infrastructure. IPTV and possibilities for future services. Video and image delivery in different resolutions SDTV and HDTV and quality. Mobile TV and transmission via a wireless channel. MPEG transmission streams and information coding. Access control. User devices – STB. Software architecture, middleware and hardware support. VoD, EPG and other standard services. Interactive TV applications and network management. Interactive TV service development using DVB MHP and GEM, OCAP, ACAP. JavaTV and Google TV.			
12.	Teaching methods: Lectures supported by slide presentations, interactive lectures, trainings (using lab equipment and software packages), team work, case studies, invited guests and lectures, individual practical assignments presentations, seminar paper, e-learning (forums, consultations).			
13.	Total available time	6 ECTS x 30 hours = 180 hours		
14.	Distribution of the available time	30 + 15 + 135 = 180 hours		
15.	Teaching activities	15.1.	Lectures	30 hours
		15.2.	Training (labs, problem solving), seminar and team work	15 hours
16.	Other activities	16.1.	Project work	60 hours
		16.2.	Self study	25 hours
		16.3.	Home work	50 hours
17.	Grading			
	17.1.	Tests		40 points
	17.2.	Seminar work/project (written or oral presentation)		45 points
	17.3.	Active participation		15 points
18.	Grading criteria		to 59 points	5 (five) (F)
			from 60 to 68 points	6 (six) (E)
			from 69 to 76 points	7 (seven) (D)
			from 77 to 84 points	8 (eight) (C)
			from 85 to 92 points	9 (nine) (B)

		from 93 to 100 points	10 (ten) (A)			
19.	Final exam prerequisites	Successfully completed activities 15.1 and 15.2				
20.	Course language	Macedonian and English				
21.	Quality assurance methods	Internal evaluation and student questionnaires				
22.	Literature					
	22.1.	Compulsory				
		No.	Authors	Title	Publisher	Year
		1.	Steven Morris, Anthony Smith-Chaigneau	Interactive TV Standards: A Guide to MHP, OCAP, and JavaTV	Focal Press	2005
		2.	Gerard O' Driscoll	Next Generation IPTV Services and Technologies	JOHN WILEY & SONS	2008
	3.		Selected papers			
	22.2.	Additional				
		No.	Authors	Title	Publisher	Year
		1.	Gerard O'Driscoll	The Essential Guide to Digital Set-Top Boxes and Interactive TV	Prentice Hall	2000
		2.				
3.						