1.	Course title		Web services and XML				
2.	Course code		KMET-I-15				
3.	Study program		Computer networks and e-technologies				
4.	Unit offering the course		FCSE				
5.	Undergraduate/master/PhD		Ma	Master			
6.	Year/semester 1(2)/summer/elective	7.	7. ECTS: <b>6</b>				
8.	Teacher(s)  Assoc. Prof. Dimitar Trajanov, Assist. Prof. Igo Mishkovski						
9.	Course prerequisites		None				
10.	Goals (competences): After successfully completing the course, the student is expected to understand and use web services and XML language. The student will be able to create different web services using the available technologies.						
11.	Course content: Web services architecture. Client-server model. Web services hosting. Usage of web services. Communication patterns. UDDI registry. UDDI interface. Using UDDI for service publication. XML digital signatures and encryption. SOAP security add-ons. Web service development in ASP.Net, Java and PHP. Using web services in mobile applications. Service based applications. SOA: service design. Service development patterns. Service composition patterns. Semantic web, standards and services. Cloud services. Amazon, Google, Microsoft Azure cloud services. ITIL: service strategy, service design, service transition, service orientation, and continuous service improvements.						
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  hou		180 hours		
15.	Teaching activities 15.		Training (labs, problem solving), seminar and team work		30 hours		
16.			Project work		60 hours		
	Other activities 1	16.2.	2. Self study		25 hours		
	16		3. Home work		50 hours		
17.	Grading						
	17.1. Tests		40 points				
	17.2. Seminar work/project (written	45 points					
	17.3. Active participation				15 points		

18.         Grading criteria         from 60 to 68 points from 69 to 76 points from 77 to 84 points from 77 to 84 points from 85 to 92 points         6 (six) (Example 12) (Exam		Grading criteria			to 59 points	5 (five) (F					
From 77 to 84 points   S (eight) (C   from 85 to 92 points   9 (nine) (B   from 93 to 100 points   10 (ten) (A	18.				from 60 to 68 points	6 (six) (E					
From // to 84 points   8 (eight) (Control   19   Final exam prerequisites   Successfully completed activities 15.1 and 15.2				ii.	from 69 to 76 points	7 (seven) (D)					
Final exam prerequisites   Successfully completed activities 15.1 and 15.2					from 77 to 84 points	8 (eight) (C)					
19. Final exam prerequisites  20. Course language  Macedonian and English  21. Quality assurance methods  Internal evaluation and student questionnaires  Literature  Compulsory  No. Authors  Title  Publisher  Year  Leonard Richardson, Sam RESTful Web Services: Web services for the real world  22.1.  Thomas Erl  SOA Design Patterns  HALL  2009  Additional  No. Authors  Title  Preentice  How to Develop, Implement and Enforce ITIL V3's Best Practices  Additional  No. Authors  Title  Publisher  Year  1. Emerco Publishing  2009  Title  Publisher  Year  Additional  No. Authors  Title  Publisher  Year  Introduction to the Semantic Web and Semantic Web Services  Services  2. Selected papers					from 85 to 92 points	9 (nine) (B					
20. Course language Macedonian and English  21. Quality assurance methods Internal evaluation and student questionnaires  Literature  Compulsory  No. Authors Title Publisher Year  Leonard Richardson, Sam RESTful Web Services: Web services for the real world  22.1. Thomas Erl SOA Design Patterns PRENTICE HALL  22. Thomas Erl Brewster, Gerard Blokdijk How to Develop, Implement and Enforce ITIL V3's Best Practices  Additional  No. Authors Title Publisher Year  Introduction to the Semantic Web and Semantic Web Services Services  2. Liyang Yu Selected papers  District Publisher Year  Introduction to the Semantic Web Services Services  Selected papers					from 93 to 100 points	10 (ten) (A)					
21.   Quality assurance methods   Internal evaluation and student questionnaires	19.	Final exam prerequisites			Successfully completed activities 15.1 and 15.2						
Literature    Compulsory	20.	Course	e langua	ige	Macedonian and English						
Compulsory   No.   Authors   Title   Publisher   Year	21.	Qualit	y assura	ance methods	Internal evaluation an	d student questionnaires					
No. Authors Title Publisher Year  Leonard Richardson, Sam RESTful Web Services: Web services for the real world  2. Thomas Erl SOA Design Patterns  Claire Engle, Jackie Brewster, Gerard Blokdijk  Additional  No. Authors Title Publisher Year  Additional  No. Authors Title Publisher Year  Introduction to the Semantic Web and Semantic Web Services  2. Liyang Yu  Selected papers  Taylor & Francis Group  2007	22.	Literat	Literature								
22.1. Leonard Richardson, Sam RESTful Web Services: Web services for the real world  2. Thomas Erl SOA Design Patterns  Claire Engle, Jackie Brewster, Gerard Blokdijk  Additional  No. Authors  Title  Publisher  Pear  Introduction to the Semantic Web and Semantic Web Services  Selected papers  SOA Design Patterns  PRENTICE HALL  2009  Emereo Publishing  2009  Taylor & Francis Group  Services  Selected papers			Compulsory								
22.1. Ruby Web services for the real world  2. Thomas Erl SOA Design Patterns  Claire Engle, Jackie Brewster, Gerard Blokdijk  Additional  No. Authors  Title  Publisher  Publisher  Year  Introduction to the Semantic Web and Semantic Web Services  2. Selected papers		22.1.	No.	Authors	Title	Publisher	Year				
2. Thomas Erl SOA Design Patterns PRENTICE HALL  3. Claire Engle, Jackie Brewster, Gerard Blokdijk ITIL V3's Best Practices Publishing  Additional  No. Authors Title Publisher Year  Introduction to the Semantic Web and Semantic Web Services  2. Selected papers  2009  2009  Emereo Publishing  2009  2009  2009  2009			1.	•	Web services for the real	O'Reilly Media	2007				
22. 3. Claire Engle, Jackle Brewster, Gerard Blokdijk Implement and Enforce TIL V3's Best Practices  Additional  No. Authors Title Publisher Year  Introduction to the Semantic Web and Semantic Web Services  2. Selected papers  Selected papers			2.	Thomas Erl	SOA Design Patterns		2009				
No. Authors Title Publisher Year  Introduction to the Semantic Web and Semantic Web Services  Selected papers  No. Authors Title Publisher Year  Introduction to the Semantic Web Group  Services Selected papers			3.		Implement and Enforce		2009				
22.2. Liyang Yu Introduction to the Semantic Web and Semantic Web Services  2. Selected papers 2007		22.2.	Additional								
22.2. Liyang Yu Semantic Web and Semantic Web Services  2. Selected papers  Semantic Web Group  Selected papers  2007			No.	Authors	Title	Publisher	Year				
			1.	Liyang Yu	Semantic Web and Semantic Web	•	2007				
3.			2.		Selected papers						
			3.								