



POLYTECHNIC OF MEĐIMURJE IN ČAKOVEC

COURSE SYLLABUS

ACADEMIC YEAR: 2020/2021

1. GENERAL COURSE INFORMATION										
1.1 Course name	XML programming									
1.2 Study program/s	Undergraduate professional study programme in Computer Science									
1.3 Course status (O,E)	elective	1.6 Mode of instruction (number of hours)			Lectures	30				
1.4 Course code					Exercises	30				
1.5 Course abbreviation	XML				Seminars					
1.6 Semester	V				E-learning					
1.7 ECTS	5	1.7 Place and time of instruction			Premises of the Polytechnic of Međimurje in Čakovec, according to the schedule published on the website of the Polytechnic					
2. TEACHING STAFF										
2.1 Course leader/s-title	Sanja Brekalo, PhD	contact			sbrekalo@mev.hr					
		contact								
2.2 Assistant/s- title		contact								
		contact								
2.3 Instruction held by- title		contact								
3. COURSE DESCRIPTION										
3.1 Course goals	After completing the course, the student will be able to apply various aspects of using XML files with client, web and XML technologies. The student should get acquainted with the tools for creating XML documents and create programs for managing XML documents.									
3.2 Prerequisites										
3.3 Course outcomes	After successfully completing the course, students will be able to: I1 - Create XML and DTD files according to the rules of creation I2 - Connect XML, CSS and XSLT when formatting XML document display in web browsers I3 - Manage the display of XML documents using DOM and JavaScript in web browsers I4 - Develop an application that uses XML to exchange, extract and save data using different programming languages									
3.4 Course content	The course presents content related to the development of applications that use XML technologies. The contents of the course are lectured from the aspect of programming and application of scripting and programming technologies. The teaching units present content related to XML, DTD, Schema, XSLT, CSS and JavaScript. Additionally, other programming languages are connected with XML technologies.									
3.5 Types of coursework	x	Lectures	x	Exercises		Blended e-learning	x	Individual activities		Laboratory
		Seminars and workshops	x	Distant learning		Field classes	x	Multimedia and network		Mentorship
		Other								
3.6 Language of	Croatian/English									

instruction 3.7 Monitoring students' work (enter the number of ECTS credits for each activity so that the total number of ECTS credits is equal to the total ECTS value of the course, 1 ECTS = 30 hours)	<table border="1"> <tr> <td>2</td> <td>Class attendance</td> <td></td> <td>Seminars</td> <td></td> <td>Essay</td> </tr> <tr> <td></td> <td>Class activity</td> <td></td> <td>Project</td> <td></td> <td>Report/paper</td> </tr> <tr> <td>1</td> <td>Midterm exams</td> <td>2</td> <td>Practical task</td> <td></td> <td>Continuous knowledge check</td> </tr> <tr> <td></td> <td>Written exam</td> <td></td> <td>Experimental work</td> <td></td> <td></td> </tr> <tr> <td></td> <td>Oral exam</td> <td></td> <td>Research</td> <td></td> <td></td> </tr> </table>						2	Class attendance		Seminars		Essay		Class activity		Project		Report/paper	1	Midterm exams	2	Practical task		Continuous knowledge check		Written exam		Experimental work				Oral exam		Research																												
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3.9 Assessment criteria – analysis per learning outcomes	<table border="1"> <thead> <tr> <th colspan="7">Ways of evaluating learning outcomes</th> </tr> <tr> <th></th> <th>Attendance</th> <th>Activity</th> <th>Mid-term exam 1</th> <th>Mid-term exam 2</th> <th>Practical work</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Outcome 1</td> <td></td> <td>5</td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td>Outcome 2</td> <td></td> <td></td> <td>30</td> <td></td> <td></td> <td>30</td> </tr> <tr> <td>Outcome 3</td> <td></td> <td></td> <td></td> <td>30</td> <td></td> <td>30</td> </tr> <tr> <td>Outcome 4</td> <td></td> <td>10</td> <td></td> <td></td> <td>20</td> <td>30</td> </tr> <tr> <td>Outcome not-related</td> <td>5</td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td>Total</td> <td>5</td> <td>15</td> <td>30</td> <td>30</td> <td>20</td> <td>100</td> </tr> </tbody> </table> <p>Grading of outcomes (in order to pass the mid-term exam/exam the student must achieve at least 50% points for each learning outcome)</p> <p>Points Grade</p> <p>89 – 100 excellent (5)</p> <p>76 – 88 very good (4)</p> <p>63 – 75 good (3)</p> <p>50 – 62 pass (2)</p> <p>0 – 49 fail (1)</p>						Ways of evaluating learning outcomes								Attendance	Activity	Mid-term exam 1	Mid-term exam 2	Practical work	Total	Outcome 1		5				5	Outcome 2			30			30	Outcome 3				30		30	Outcome 4		10			20	30	Outcome not-related	5					5	Total	5	15	30	30	20	100
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3.10 Specific features related with taking the course	<p>If a student collects 50% of the points of each outcome, he / she directly take the exam, provided that he / she have submitted a practical task. A student cannot take the exam if he / she have not submitted a practical task. The practical task is made according to the instructions published on the Merlin system and is submitted by placing it on the Merlin. The practical task is submitted at least 3 days before the exam. During the exam, it is possible to verbally check the knowledge in the preparation of practical task.</p> <p>If a student does not achieve a sufficient number of points on the midterm exam, he / she cannot take the next midterm exam.</p> <p>Once achieved points in intermediate exams for each learning outcome are no longer deleted unless the student decides to correct the result for each learning outcome, whereby the points won until then are deleted and newly achieved points for that learning outcome are entered.</p>																																																													
3.11 Students obligations	<p>Full-time students are required to attend at least 70% of the total number of</p>																																																													

	<p>hours of lectures and exercises in order to exercise the right to take the exam. Part-time students are required to attend at least 30% of the total number of hours of lectures and exercises in order to exercise the right to take the exam. If the student has not fulfilled all the obligations set by the course, he is obliged to attend the lectures again and meet the conditions for taking the exam.</p> <p>Attendance can be offset by online tuition, organised webinars and added assignments given by teachers. One lesson lasts 45 minutes, and several hours form a teaching unit. Absence from one teaching unit is counted as one absence. Delays and apologies are recorded separately. In that case, if the student missed more than 50% of classes, and has a justifiable reason/apology, the request should be submitted to the Department Council, which then decides on the justification of student absences with the obligatory opinion of the course leader.</p>	
3.12 Written assignments		
3.13 Required reading	1.	Joe Fawcett , Danny Ayers, Liam R. E. Quin, Beginning XML 5th Edition, Wrox, 2012
	2.	
3.14 Additional reading	1.	Erik T. Ray, Learning XML: Creating Self-Describing Data 2nd Edition, O'Reilly Media, Inc., 2003.
	2.	
4 ADDITIONAL COURSE INFORMATION		
4.1 Quality control	The quality of the program, teaching process, teaching skills and level of mastery of the material will be established by conducting a written evaluation based on questionnaires, and in other standardised ways and in accordance with the by-laws of the Polytechnic of Međimurje in Čakovec.	
4.2 Contact the teacher	Students can contact the teacher during the office hours and during classes, while for short questions and explanations they can contact him/her any day during working hours by coming in person or by landline. It is also possible to ask questions by e-mail, which will be answered in 48 hours at the latest. It is desirable for students to come as often as possible for any possible questions during the teacher's office hours.	
4.3 Information about the course	It is the obligation of each student to be regularly informed about the course. All notifications about the classes or possible postponement of classes will be posted on the bulletin board and on the website of the Polytechnic at least 24 hours in advance.	
4.4 Course contribution to the study program	<p>IS7 Develop programming code in several programming languages using modern methods and tools</p> <p>IS13 Develop applications using an object-oriented paradigm in solving program tasks</p> <p>IS17 Select the appropriate programming language and technology when solving programming tasks</p> <p>IS16 Develop web and mobile projects, applying advanced technologies and connecting to databases using modern methods and tools</p>	
5. ANALYSIS OF COURSE TOPICS (the number of hours is equal to the number of lectures and exercises of		

the course)

LECTURES				
Hours	Topic and description	Method	Learning outcomes	Course outcome
		<ul style="list-style-type: none"> • Direct teaching (lecture, instruction, pp presentation) • Discovery learning (individual, lead, discussion) • Group learning • Case study • Field classes... 		
1.-2.	Introduction to XML, rules for writing an XML document	Lecture, pp presentation	Use tools to construct XML files and correctly structure XML documents	I1
3.-4.	Linking XML and CSS files, formatting the contents of an XML file with CSS, benefits and disadvantages of this approach	Lecture, pp presentation	Apply rules for writing XML files and edit their display using CSS	I1
5.-6.	Introduction to XSL and structuring XML using XSLT	Lecture, pp presentation, discussion	Apply XSLT technology in transforming XML documents for different outputs	I2
7.-8.	XSLT scripting and use of XPATH	Lecture, pp presentation, discussion	Make selections in XML documents using XPath and combine XML, CSS and XSLT in XML document processing	I2
9.-10.	Using XSL when transforming XML files in web browsers	Lecture, pp presentation, discussion	Solve project tasks based on XML	I2
11.-12.	XSL transformations	Lecture, pp presentation, discussion	Optimize XSLT code	I2
13.-14.	DTD	Lecture, pp presentation, discussion	Apply rules for writing XML files and include rules in DTD files	I1
15.-16.	Midterm exam 1			
17.-18.	XML and JavaScript, DOM	Lecture, pp presentation, discussion	Use JavaScript to manipulate XML DOM	I3
19.-20.	XML and JavaScript	Lecture, pp presentation, discussion	Use JavaScript to manage the display of XML	I3
21.-22.	Interactive XML file management using JavaScript	Lecture, pp presentation, discussion	Use JavaScript to manage the contents of an XML file	I3
23.-24.	XML-based applications	Lecture, pp	Use JavaScript to	I3

		presentation, discussion	manage the contents of an XML file	
25.-26.	Using different programming languages while managing an XML file	Lecture, pp presentation, discussion	Use XML to share, extract and save data using different programming languages	14
27.-28.	Examples of XML-based systems	Lecture, pp presentation, discussion, individual assignments	Use XML to share, extract and save data using different programming languages	14
29.-30.	Midterm exam 2			
EXERCISES/ SEMINARS				
Hours	Topic and description	Method <ul style="list-style-type: none"> • Direct teaching (lecture, instruction, pp presentation) • Discovery learning (individual, lead, discussion) • Group learning • Case study • Field classes... 	Learning outcomes	Course outcome
1.-2.	Introduction to XML, rules for writing an XML document	Lecture, pp presentation	Use tools to construct XML files and correctly structure XML documents	11
3.-4.	Linking XML and CSS files, formatting the contents of an XML file with CSS, advantages and disadvantages of this approach	Lecture, pp presentation, guided assignments	Apply rules for writing XML files and edit their display using CSS	11
5.-6.	Introduction to XSL and structuring XML using XSLT	Lecture, pp presentation, guided assignments	Apply XSLT technology in transforming XML documents for different outputs	12
7.-8.	XSLT encoding and use of XPATH	Lecture, pp presentation, guided assignments	Make selections in XML documents using XPath and combine XML, CSS and XSLT in XML document processing	12
9.-10.	Using XSL when transforming XML files in web browsers	Lecture, pp presentation, guided assignments	Solve project tasks based on XML	12
11.-12.	XSL transformations	Lecture, pp presentation, guided assignments	Optimize XSLT code	12
13.-14.	DTD	Independent creation of tasks	Apply rules for writing XML files and include rules in	11

			DTD files	
15.-16.	Midterm exam 1			
17.-18.	XML and JavaScript, DOM	Lecture, pp presentation, guided assignments	Use JS to manipulate XML DOM	13
19.-20.	XML and JavaScript	Lecture, pp presentation, guided assignments	Use JavaScript to manage the display of XML	13
21.-22.	Interactive XML file management using JavaScript	Lecture, pp presentation, guided assignments	Use JavaScript to manage the contents of an XML file	13
23.-24.	XML-based applications	Lecture, pp presentation, guided assignments	Use JavaScript to manage the contents of an XML file	13
25.-26.	Using different programming languages when managing an XML file	Lecture, pp presentation, guided assignments	Use XML to share, extract and save data using different programming languages	14
27.-28.	Examples of XML-based systems	Independent creation of tasks	Use XML to share, extract and save data using different programming languages	14
29.-30.	Midterm exam 2			