



COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Web programming	

Academic staff	Core academic unit(s)
Coordinating: Mindaugas Stoncelis Other:	VUŠA

Study cycle	Type of the course unit
First	Compulsory

Mode of delivery	Semester or period when it is delivered	Language of instruction
Auditorium, distance learning	3 semester	english

Requisites	
Prerequisites: Procedural programming	Co-requisites (if relevant): Discret mathematics

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	136	56	80

Purpose of the course unit

Purpose of the module – knowledge transfer and achievement of capabilities to apply key internet technologies.

Generic competences:

- Life-long learning (*GK2*).

Specific competences:

- Knowledge and skills of underlying conceptual basis (*SK4*).
- Software development knowledge and skills (*SK5*).
- Technological and methodological knowledge and skills, professional competence (*SK6*).

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
Define formal data format, assign namespaces	Problem-oriented teaching, case analysis, group discussion	Laboratory assignments, examination in written form.
Define formal structure and constraints of the data format, with the help of tools validate whether specific document satisfies the formal structure		
Write queries for XML document		
Transform XML documents using appropriate tools		
Design data visualization for browsers using appropriate tools		
Apply internet technologies tools in practice		

Content	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	Tasks for individual work
Extensible mark-up language XML	2				2		4	6	Individual reading, self- preparation for laboratory assignment No. 1
Namespaces in XML documents	2				2		4	6	
Query language XPath	4				6		8	8	
Document structure definition language XML Schema	4				6		8	8	Individual reading, self- preparation for laboratory assignment No. 2
Data visualization structure definition language HTML	2				2		4	6	Individual reading, self- preparation for laboratory assignment No. 3
XML document transformation language XSLT	2				4		8	8	
Data visualization style definition language CSS	4				4		8	8	Individual reading, self- preparation for laboratory assignment No. 4
User interaction definition language JavaScript	4				6		8	10	
Preparation for the exam (exam is taken in written form).							4	20	
Total	24				32		56	80	

Assessment strategy	Weight %	Deadline	Assessment criteria
Laboratory assignment No. 1	10	Week 6	Students have to create meaningful XML document with freely chosen data and namespace (0.5 points). Students have to write queries for the data in this document (0.5 points). The penalty for exceeding the deadline is 50% for the first week; 0 points are collected if deadline is exceeded more than one week.
Laboratory assignment No. 2	10	Week 10	Students have to define formal structure of their XML document (1 point). The penalty for exceeding the deadline is 50% for the first week; 0 points are collected if deadline is exceeded more than one week.
Laboratory assignment No. 3	10	Week 13	Students have to write transformation, that transforms their XML document to HTML document (1 point). The penalty for exceeding the deadline is 50% for the first week; 0 points are collected if deadline is exceeded more than one week.
Laboratory assignment No. 4	10	End of the semester	Students have to design an HTML page with style definitions (0.5 points); have to implement interaction with user (0.5 points).
Additional mini-assignments	0-10	During laboratory work	Students, willing to collect additional points, may take optional mini- assignments (one mini-assignment per one laboratory work). There will be 10 mini-assignments in total, 0.1 points each.

Exam in written form	60	Exam session	For the right to take the exam student must collect at least 2 points from laboratory assignments. Exam consists of 12 open and semi-open questions, each question is evaluated from 0 to 0.5 points; maximum 6 points can be collected.
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Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
Required reading				
Erik T. Ray	2003	Learning XML, Second Edition		O'Reilly Media
Eric van der Vlist	2002	XML Schema		O'Reilly Media
Jeni Tennison	2004	Beginning XSLT		Apress
David Flanagan	2001	JavaScript: The Definitive Guide		O'Reilly Media
Mark Pilgrim	2010	HTML5: Up and Running		O'Reilly Media
David Flanagan	2010	jQuery Pocket Reference		O'Reilly Media