PT&SCHE
Introduction of part-time and short cycle studies in Serbia

Co-funded by the Erasmus+ Programme of the European Union

D5.1.2. Development of curriculum for the pilot part-time online bachelor program INFORMATION SYSTEMS

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Project full title:	Introduction of part-time and short-cycle studies in Serbia
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Coordinator:	TLU – Tallinn University
Project start date:	October 15, 2015
Project duration:	36 months

Abstract	This report provides the information on developed curriculum of the pilot implementation of the online part-time bachelor program INFORMATION SYSTEMS. The program provides 240 ECTS and may last up to 8 years, as it is dedicated to part-time students. BMU developed the curriculum for this programme and was submitted for the accreditation. The BSc program INFORMATION SYSTEMS was accredited by the National Accreditation Commission of Republic of Serbia on 26th of February 2016. This report present the curriculum of this accredited online bachelor program.

DOCUMENT CONTROL SHEET

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Version	Date	Revision Description	Responsible Partner
1.0	15.11.2015	submitted for accreditation	Dragan Domazet, BMU
1.1	10.2.2016	submitted for the accreditation of new version	Dragan Domazet, BMU
1.1	26.2.2016	Decision of accreditation was made by Accreditation Commission	Dragan Domazet, BMU
1.2	11.7.2017	Submitted as D5.1.2	Dragan Domazet, BMU

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CURRICULUM DEVELOPMENT OF THE PART-TIME ONLINE BACHELOR PROGRAM “INFORMATION SYSTEMS”

1 Introduction

This documents contains syllabi of all courses of the part-time online bachelor program INFORMATION SYSTEMS. Graditaes students get the degree Bachelor of Science and the title of “Graduate Engineer of Information Technology and Systems”, or in Serbian “Diplomiranji inženjer onformacionih tehnologija i sistema”

This program was submitted for the accreditation on 15.11.2015, and after a revision, for the second time on 10.2.2017. The National Accreditation Commission of Republic of Serbia accredited this program on 26.2.2016.

Belgrade Metropolitan University decided to offer this program as a pilot program for part-time studies and has made necessary activities to be ready for the enrollment of first students of this online part-time program starting 1.10.2017.

2 List of Courses

In English:

Sem.	BSc INFORMATION SYSTEMS (240 ECTS, 4 YEARS)	ECTS	Lecture hours	Tutorial hours
1	IS205 Information Systems Fundamentals	6	2	2
	IT101 IT Fundamentals	8	2	3
	MK150 Management Fundamentals	8	3	2
	OM100 Introduction to Operations Management	6	2	2
	NT111 English	4	3	0
2	IT120 Application Development	6	2	3
	OM110 Analysis and Design of Business Processes	6	2	3
	IT210 IT Systems	8	2	3
	MA100 Mathematics for Managers	6	2	3
	NT112 English 2 2	4	3	0
3	IT350 Databases	8	3	3
	MK110 Business Economics	8	3	3
	MA272 Business Statistics with Probability	8	2	3
	NT213 English for IT	4	3	0
4	IT270 IT Infrastructure	8	2	3
	IT370 Human-Computer Interaction	8	2	3
	MG150 Business Finances with Accounting	8	3	3
	OM410 Business Process Management	8	3	3
5	OM232 Project Management	8	3	3
	IS280 Systems Analysis and Design	8	3	3
	IS250 Architecture of Organizational IT Systems	6	2	2
	IS345 Digital Content Management	8	2	3
6	IS310 Information Systems of Organizations	8	3	2
	IS330 Information Systems Management Strategy	8	2	3
	NT210 Business Ethics and Communication	6	2	2
	Elective Course 1	8		
7	IS360 IT Systems Auditing and Control	8	3	3
	Elective Course 2	8		
	Elective Course 3	8		
	Elective Course 4	8		
8	Elective Course 5	8		
	IS485 Development of Information System Project	8	5	5
	IS491 Internship in IS	4	0	0
	IS495 Capstone IS Project	8	0	0

	ELECTIVE COURSES			
6	CS324 Scripting Languages	8	3	3
	IT255 Web Systems 1	8	3	3
	IT381 Information Security and Safety	8	3	3
	CS225 Operating Systems	8	3	2
7	CS322 Programming in C#	8	3	3
	IT375 Computer Control of Systems	8	3	3
	MG410 Organizational Change Management	8	3	3
	CS101 Introduction to OO Programming	10	3	4
	CS220 Computer Architecture	8	2	3
	OM240 Quality Management	8	3	3
8	IS335 Business Intelligence	8	3	3
	OM140 Supply Chain Management and Logistics	8	3	3

In Serbian:

Semestar	Redni broj	Osnovne akademske studije **INFORMACIONI SISTEMI** **Trajanje 4 god., 240 ESPB,** **Plan nastave u školskoj 2017/18. god.**	ESPB	Broj časova nedeljno			
				Predav.	Vežbe	Lab. vež.	DON
1	1	IS205 Osnove informacionih sistema	6	2	2	0	0
	2	IT101 Osnove informacionih tehnologija	8	2	1	2	0
	3	MK150 Osnovi menadžmenta	8	3	2	0	0
	4	OM100 Uvod u operacioni menadžment	6	2	2	0	0
	5	NT111 Engleski 1	4	3	0	0	0
2	6	IT120 Razvoj aplikacija	6	2	0	3	0
	7	OM110 Analiza i projektovanje poslovnih procesa	6	2	1	2	0
	8	IT210 Sistemi informacionih tehnologija	8	2	1	2	0
	9	MA100 Matematika za menadžere	6	2	3	0	0
	10	NT112 Engleski 2	4	3	0	0	0
3	11	IT350 Baze podataka	8	3	0	3	0
	12	MK110 Poslovna ekonomija	8	3	3	0	0
	13	MA272 Poslovna statistika sa verovatnoćom	8	2	3	0	0
	14	NT213 Engleski za informatičare	4	3	0	0	0
4	15	IT270 IT infrastruktura	8	2	3	0	0
	16	IT370 Interakcija čovek-računar	8	2	1	2	0
	17	MG150 Poslovne finansije sa računovodstvom	8	3	3	0	0
	18	OM410 Upravljanje poslovnim procesima	8	3	1	2	0
5	19	OM323 Upravljanje projektima	8	3	3	0	1
	20	IS280 Analiza i projektovanje sistema	8	3	1	2	0
	21	IS250 Arhitektura IT sistema organizacija	6	2	2	0	0
	22	IS345 Upravljanje digitalnim sadržajima	8	2	3	0	0
6	23	IS310 Informacioni sistemi organizacija	8	3	2	0	0
	24	IS330 Strategija i upravljanje informacionim sistemima	8	2	3	0	0
	25	OM410 Upravljanje poslovnim procesima	8	3	1	2	0
	26	Izborni predmet 1	8	3	1	2	0
7	27	IS360 Revizija i kontrola IT sistema	8	3	3	0	0
	28	Izborni predmet 2	8	3	3	0	0
	29	Izborni predmet 3	8	3	3	0	0
	30	Izborni predmet 4	8	3	3	0	0
8	31	Izborni predmet 5	8	3	3	0	0
	32	IS491 Stručna praksa (2 meseca)	4	0	0	0	0
	33	IS485 Projekat razvoja informacionog sistema	8	5	5	0	0
	35	IS495 Završni rad	8	0	0	0	0

Semestar	Redni broj	Osnovne akademske studije **INFORMACIONI SISTEMI** **Trajanje 4 god., 240 ESPB,** **IZBORNI PREDMETI** **Generacija upisana 2017/18.**	ESPB	Broj časova nedeljno			
				Pred.	Vežbe	Lab. veže	DON
Izborni predmet 1							
6	26	CS324 Skripting jezici	8	3	1	2	0
	26	IT381 Zaštita i bezbednost informacija	8	3	1	2	0
	26	CS225 Operativni sistemi	8	3	1	1	0
Izborni predmet 2, 3 i 4							
7	od 29 do 30	MG410 Upravljanje organizacionim promenama	8	3	3	0	0
		CS322 C# programski jezik	8	3	1	2	0
		CS220 Arhitektura računara	8	2	2	1	0
		CS101 Uvod u objektno-orijentisano programiranje	10	3	1	3	0
		OM240 Upravljanje kvalitetom	8	3	3	0	0
		MK310 Medjunarodno poslovanje	8	4	3	0	0
Izborni predmete 5							
8	31	IS335 Poslovna inteligencija	8	3	3	0	0
	31	OM140 Logistika i upravljanje lancem snabdevanja	8	3	2	1	0

3 Syllabi of Courses in English

PLAN AND COURSE PROGRAM

IT101 BASICS IT

DATA ON A CONTINUING PERSON	
Lectures	Prof. Dr. Miroslava Raspopović Milic
Exercise	Andrej Stanishev - students Belgrade Goran Stamenović - students of Niš Valentina Paunović - internet students
E-mail address of the teacher	miroslava.raspopovic @ metropolitan.ac.rs
Skype address of the teacher	M.raspopovic.fit
Terms for teacher consultations via Skype	Monday 10-12
E-mail address of the contributor	andrej.stanisev @ m etropolitan.ac.rs Goran.stamenovic@metropolitan.ac.rs Valentina.paunovic@metropolitan.ac.rs
Skype address of an associate	A.stanisev.fit Goran.stamenovic.skype Valentina.paunovic
Terms for consulting associates via Skype	Andrej Stanishev - Wednesday 17-19 Goran Stamen C - Monday 18-20 Valentina Paunovic - Thursday 1 5 -1 7 - 1 Week 1 5 7
CASE INFORMATION	
Semester	1
Preconditions	Does not have
Number of ECTS	8
Number of lessons per week	2
Number of hours of group exercises per week	1
Number of hours of individual practice not deljno	2
Number of hours of independent research work per week	1
INFORMATION ON PRE-EXPANDED OBLIGATIONS AND EXAMINATION	
Number of homework during the semester	15
Maximum number of points for one homework	1.5
Number of tests during the semester	5
The maximum number of points for one To test	2, 5
Number of colloquiums during the semester	0
Maximum number of points for one colloquium	-
Number of projects during the semester	1
Maximum number of points per	2 5

project	
Number of seminars during the semester	0
Maximum number of points for one seminar work	-
A) Maximum number of points for student achievement during the semester	10
B) Maximum number of points for pre-examination obligations	60
Tasks (15 x 1.5poen)	22.5
Tests (5 x 2,5 pounds)	12.5
Project	25
C) Maximum number of points for the exam	30
Total number of points (A + B + C):	**100**
Duration of the exam in minutes	120
Exam form (delete unnecessary options)	Work on the computer and in writing
Computer tools or accessories used in the exam	(See further instructions)

PLAN OF TEACHING

Week	Teaching Unit	Topics	Learning Output	Tutorial
1	ITF IT and related disciplines	INFORMATION TECHNOLOGIES AND RELATED DISCIPLINE Definition of computing Computer disciplines Computer Engineering Computer science Information systems Information Technology Software engineering Cognitive Sciences Mathematics and statistics	Which computer disciplines There are, what area of computer Discipline cover IT and who is IT relation to other computer disciplines Knowledge of the relationship between IT and Non-compilation disciplines. Why are mathematics and statistics? Important for IT.	Basic features of the Scilab package Exercises with variable and basic operations of Scilab. Using Scilab Workflow Space Program for working with tables. Creating a computer configuration
2	ITF Basic topics in	IT PROFESSIONALISM	Understand why adaptability is	Text processing software (Open Office, MS Office ...) Entry and basic formatting

	IT	Adaptability The Influence of IT Changes Professionalism (life-long learning, Professional development, ethics, Responsibility) Communication skills	Professionalism important for IT Professionals He understands why he is good Communication important for IT Professionals Describe the complexity that is Present in IT Explain to IT professionals They must know how to Manage complex systems Provide a comprehensive overview of the example tools and methods used in IT for complex management Systems.	Text Making a business letter Creating a personal CV Creating a Power Point presentation

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
1	ITF IT and related disciplines	INFORMATION TECHNOLOGIES AND RELATED DISCIPLINE Definition of computing Computer disciplines Computer Engineering Computer science Information systems Information Technology Software engineering Cognitive Sciences Mathematics and statistics	Which computer disciplines There are, what area of computer Discipline cover IT and who is IT relation to other computer disciplines Knowledge of the relationship between IT and Non-compilation disciplines. Why are mathematics and statistics? Important for IT.	Basic features of the Scilab package Exercises with variable and basic operations of Scilab. Using Scilab Workflow Space Program for working with tables. Creating a computer configuration
2	ITF Basic topics in IT	IT PROFESSIONALISM Adaptability The Influence of IT Changes Professionalism (life-long learning, Professional development, ethics,	Understand why adaptability is Professionalism important for IT	Text processing software (Open Office, MS Office ...) Entry and basic formatting Text Making a business letter Creating a personal CV

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
		Responsibility) Communication skills	Professionals He understands why he is good Communication important for IT Professionals Describe the complexity that is Present in IT Explain to IT professionals They must know how to Manage complex systems Provide a comprehensive overview of the example tools and methods used in IT for complex management Systems.	Creating a Power Point presentation
3	ITF Application of mathematics and Statistics in IT	CODING SCHEDULE AND NUMBER SYSTEMS Data classes Numerous systems Encrypt data in a computer Representation of integers Basic sizes in computing Logical operations Application of logic in computing	He understands the basics of IT Based on different areas of mathematics He knows	Exercises with statistical functionsConversions Numerous systems Using Excel statistical functions

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
			many systems that are Used in computing Understands the principles of presentation Data and coding systems Basic logical operations and Their application in computing	
4	ITF Basic topics in IT Model IT system	COMPONENTS OF COMPUTER SYSTEMS Components of computer systems Computer system System software Operating system Utilities Application software Computer Hardware Central processing unit Input / output devices Memory	Understand the subsystems Consists of one computer system He knows the parts of the computer and how they function	Create basic HTML Document
5	ITF Basic topics in IT Model IT system	INPUT AND EXTERIOR DEVICES Data and information Input and output devices	It makes a difference between data and information and understands their significance Understands the	Connecting an HTML document

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
			transformation process Data in information and knowledge He knows the standard input and output devices of the computer System and the way they are Functioning	
6	ITF1 Basic topics in IT Information - Communication Technology	OPERATING SYSTEMS Operating system roles Types of operating systems and their Characteristics - Operating systems of personal computers - Operating systems server - Real-time operating systems - Mainframe operating systems	He knows the basic types of operating systems and knows the difference between them	Fundamentals of Unix Shell
7	ITF1 Basic topics in IT Information - Communication Technology	COMPUTER NETWORKS AND COMMUNICATIONS The need for networking of computer systems Computer network elements Network protocols	Understands the need for Networking He knows the elements of the network He understands the need for networking Protocols Understands the role of portable media	Network simulation in Cisco Packet Tracer

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
			Understands the functionality of basic network components	
8	ITF1 Basic topics in IT Information - Communication Technology	BASICS OF PROGRAM LANGUAGES Programming Basic data structures Basic program constructions Program paradigms	Define basic structures Data (primitive data, Fields, strings) Display basic software Construction Display properties of object-Oriented programming Display programming properties Based on events	JavaScript basics
9	ITF1 Basic topics in IT Information - Communication Technology	INTERNET, WORLD WIDE WEB AND MULTIMEDIA Web systems and technologies URI Web Standards Web interface Website development Types of websites Multimedia on the web	He understands how the WWW functions Recognizes the basic standards on which the WWW is based	Using JavaScript in HTML
10	ITF1 Basic topics in IT Information - Communication	DEVELOPMENT OF THE WEB PAGE HTTP Markam languages HTML XML	He knows how HTTP works He knows the basic elements of HTML	Website Planning Web Development Elements Programs for raster image processing. The basics of Adobe Photoshop options

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
	Technology		He knows the purpose of the XML language	
11	ITF1 Basic topics in IT Information - Communication Technology	SERVER / CLIENT PROGRAMMING Client side programming Programming the server side	He knows the technologies that are Used to program the client side He knows the technologies that are Used to program the server side Understand when using programming from a client, and when on a server side	HTML tables and forms
12	SP8 History of computing	HISTORY OF COMPUTER Hardware history Software history History of operating systems	Identifies the latest technologies in the light of the history of computing Identifies significant continuing trends in IT Identifies the latest technologies in the light of the history of computing Identifies significant continuing	JS in tables and forms

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
			trends in IT Recognizes significant changes in human-computer interaction during computer history Understands the significance of the development impact Computing on society.	
13	ITF2 History of information Technology	HISTORY OF INFORMATION TECHNOLOGIES History of Internet telecommunications The development of the method of human-to-Computer A historical view of the impact of computing on society	He knows the history of the Internet and its impact on communications	JS & HTML
14	ITF2 Organizational issues	DEVELOPMENT OF INFORMATION SYSTEMS Business Process Reengineering Cost benefit analysis Project management Information dissemination and change management Definition of the information system Elements of information systems Types of information systems Development of the information system	She understands why and how it is done Business process reengineering He understands why the analysis is done Costs - profit It recognizes the character of	Information system design and planning Gant's diagram

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
			management Project Recognizes the problems that arise when introducing a new one Applications He knows the activities he is Need to be implemented The introduction of a new application It recognizes the importance of dissemination Information She understands why it's necessary to manage the changes Understands the need for process integration Understands the process of developing the	

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
			information system	
15	ITF5 Application of Computing in Different domains SP3 Social context Computing	Bio-Informatics and Medical Applications Business applications E-commerce Education Design Legislation Political processes Social informatics Social impact of IT on society Online communities and social implications Questions difference The problem of accessing IT resources The question of globalization Digital division	Recognizes the application of IT in non-computer disciplines He understands that IT affects almost all aspects of modern life Describe how IT changes interactions and communications in society Describe how IT affects Globalization and world economy, culture, political systems, health, security, wars and the like He understands that there are positive and Negative aspects of the impact of IT on Interaction between people	Web technologies for e-learning development Create an online store Getting to know Word Press

Sunday	Teaching unit	Thematic units	The result - the knowledge or skills that a student needs to gain	Exercises
			He understands how IT changes and affects culture as a whole He understands the problem of digital divide and knows how it originated Identifies problems related to Sexual and religious affiliation He knows how the Internet influenced Computing and how it affects Society	

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