

SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	Babes-Bolyai University
1.2 Faculty	Faculty of Mathematics and Computer Science
1.3 Department	Department of Computer Science
1.4 Field of study	Computer Science
1.5 Study cycle	Master
1.6 Study programme / Qualification	High Performance Computing and Big Data Analytics

2. Information regarding the discipline

2.1 Name of the discipline	Business Process Analysis and Automation (Analiza și automatizarea proceselor de afaceri)						
2.2 Course coordinator	Lecturer PhD Camelia Chisăliță-Crețu						
2.3 Seminar coordinator	Lecturer PhD Camelia Chisăliță-Crețu						
2.4. Year of study	2	2.5 Semester	1	2.6. Type of evaluation	E	2.7 Type of discipline	Optional
2.8 Discipline Code	MME8212						

3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	4	Of which: 3.2 course	2	3.3 seminar/laboratory	1 sem + 1 project
3.4 Total hours in the curriculum	56	Of which: 3.5 course	28	3.6 seminar/laboratory	28
Time allotment:					Hours
Learning using manual, course support, bibliography, course notes					30
Additional documentation (in libraries, on electronic platforms, field documentation)					30
Preparation for seminars/labs, homework, papers, portfolios and essays					44
Tutorship					9
Evaluations					6
Other activities:					-
3.7 Total individual study hours	119				
3.8 Total hours per semester	175				
3.9 Number of ECTS credits	7				

4. Prerequisites (if necessary)

4.1. curriculum	<ul style="list-style-type: none"> • OOP, Programming Fundamentals, Advanced Programming Methods
4.2. competencies	<ul style="list-style-type: none"> • Good programming skills in at least one of the programming languages Java, C#

5. Conditions (if necessary)

5.1. for the course	<ul style="list-style-type: none"> • Course hall with projector
5.2. for the seminar /lab activities	<ul style="list-style-type: none"> • Laboratory: computers and use of a programming language

6. Specific competencies acquired

Professional competencies	<ul style="list-style-type: none"> • C2.1 Identify adequate software systems development methodologies • C4.3 Identify models and methods adequate to real life problem solving.
Transversal competencies	<ul style="list-style-type: none"> • CT1 Apply rules to organized and efficient work, responsibilities of didactical and scientific activities and creative capitalization of own potential, while respecting principles and rules for professional ethics. • CT3 Use efficient methods and techniques for learning, knowledge gaining, and research and develop capabilities for capitalization of knowledge, accommodation to society requirements and communication in English.

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	<ul style="list-style-type: none"> • Enhance the students understanding on business process identification and its automation. • Provide the students with an environment in which they can explore the usage and usefulness of software development to increase efficiency in business processes. • Induce a realistic and industry driven view of software development for business process automation related concepts and their inherent benefits.
7.2 Specific objective of the discipline	<ul style="list-style-type: none"> • Give students the ability to explore various ways to automate business processes. • Improve the students' abilities to tackle on goal driven process automation. • Enhance the students understanding of process automation value in business. • Students will be able to use various tools, e.g., UiPath Studio, in order to provide a process automation solution. • Students will be able to design and develop a business process automation solution following specific requirements and real world case studies available on RPA learning platforms.

8. Content

8.1 Course	Teaching methods	Remarks
1. Process Automation 1.1. Introduction to Automation 1.2. Automation Implementation Methodology Fundamentals	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
2. Automation Team Organization 2.1. Automation Project Roles 2.2. Automation Business Analysis Fundamentals	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
3. Process Analysis Fundamentals. UiPath Process Mining (Part 1)	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
4. Process Analysis Fundamentals. UiPath Process Mining (Part 2)	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
5. Process Analysis Advanced. UiPath Process Mining (3)	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation 	

	<ul style="list-style-type: none"> • Didactical demonstration 	
6. Process Analysis Fundamentals. UiPath Task Mining (Part 1)	<ul style="list-style-type: none"> • Interactive exposure • Explanation • Conversation • Didactical demonstration 	
7. Process Analysis Fundamentals. UiPath Task Mining (Part 2)	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
8. Process Analysis Fundamentals. UiPath Task Capture (Part 1)	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
9. Process Analysis Fundamentals. UiPath Task Capture (Part 1)	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
10. AI-powered automation	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
11. Automation Operating Model	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
12. Automation Hub 12.1. UiPath Automation Hub Overview 12.2. The Lifecycle of an Automation Idea in UiPath Automation Hub	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
13. Automation Management. UiPath Assistant	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	
14. Automation Management. UiPath Action Center	<ul style="list-style-type: none"> • Interactive exposure • Explanation. Conversation • Didactical demonstration 	

Bibliography

1. Institute for RPA (2015), An Introduction to RPA. A primer, <http://irpaai.com/wp-content/uploads/2015/05/Robotic-Process-Automation-June2015.pdf>
2. Steve Kaelble (2018), RPA, https://www.icsanalytics.com/wp-content/uploads/2019/02/robotic_process_automation_for_dummies.pdf
3. KPMG (2018), RPA, <https://home.kpmg/content/dam/kpmg/jp/pdf/jp-en-rpa-business-improvement.pdf>
4. Tom Taulli (2020), The robotic Process Automation Handbook. A guide to implementing RPA systems, Apress, <https://link.springer.com/book/10.1007/978-1-4842-5729-6>
5. Guðrún Lilja Sigurðardóttir (2018), Robotic Process Automation - Dynamic Roadmap for Successful Implementation, master thesis.
6. UiPath, <https://www.uipath.com/developers/video-tutorials>
7. UiPath Studio Docs (2023) - <https://docs.uipath.com/studio/docs/release-notes-2022-10-3>
8. UiPath Academy - <https://academy.uipath.com/>

8.2 Seminar / laboratory	Teaching methods	Remarks
1. Laboratory 1 UiPath Business Automation Platform for Business Analysts Business Analyst project setup	Presentation, Conversation, Dialogue, Case studies	
2. Laboratory 2 UiPath Process Mining (1)	Presentation, Conversation, Dialogue, Case studies	
3. Laboratory 3 UiPath Process Mining (2)	Presentation, Conversation, Dialogue, Case studies	

4. Laboratory 4 UiPath Task Mining	Presentation, Conversation, Dialogue, Case studies	
5. Laboratory 5 UiPath Task Capture (1)	Presentation, Conversation, Dialogue, Case studies	
6. Laboratory 6 UiPath Task Capture (2)	Presentation, Conversation, Dialogue, Case studies	
7. Laboratory 7 Final Project Preparation	Evaluation	
References: See references from Lectures.		

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

<ul style="list-style-type: none"> • Students will know how to design and develop an automation solution for a repetitive business process, considering an identified flow. • Students will know the components of the UiPath platform and to use them properly.
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10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.1 Lecture	Two workshops on the analysis and automation implementation of business processes. Students will be graded based on the involvement in the activities. The arithmetic average of the grades is denoted by W .	Oral evaluation	20%
10.2 Seminar/laboratory activities	Three out of six lab activities will be graded. The arithmetic average of the grades is denoted by L .	Oral evaluation	30%
10.3 Project	Automation Business Analyst Project using UiPath tools. The grade is denoted by P .	Oral evaluation	50%

Remark:

- Laboratory assignments will be achieved in teams of 2-3 students or individually, according to the tasks involved.
- The automation business analyst project will be achieved in groups of 2-3 students.

10.4 Minimum performance standards

- The final grade (M) is computed as follows: $M = 30\%L + 20\%W + 50\%P$.
- At least three laboratory assignments and the project should be turned in to pass the exam.
- At least $M \geq 5.00$ is favourable to pass this course exam.

Date

Signature of course coordinator

Signature of seminar coordinator

16.04.2024

Lect. PhD. Camelia Chisăliță-Crețu,

Lect. PhD. Camelia Chisăliță-Crețu,

Date of approval

Signature of the head of department

Assoc. Prof. PhD. Adrian Sterca