Low-Code Solutions for Business Analytics

Course code	*IT107*
Compulsory in the programmes	*Elective*
Level of studies	*Undergraduate*
Number of credits	*6 ECTS (46 hrs. – lectures and workshops + 4 hours of examination, 112 self-study)*
Course coordinator (title and name)	*Lect. Džiugas Petruškevičius*
Prerequisites	*None*
Language of instruction	*English*

THE AIM OF THE COURSE:

The overall objective of this course is to introduce students to a software suite that aggregates cloud-based business analytics, app development, and low-code software solutions in order to equip them with practical knowledge of business oriented mobile application development, processes automation, virtual agents and reports preparations.

MAPPING OF COURSE LEVEL LEARNING OUTCOMES (OBJECTIVES) WITH DEGREE LEVEL LEARNING OBJECTIVES (See Annex), ASSESSMENT AND TEACHING METHODS

Course level learning outcomes (objectives)	Learning objectives for BSc in Business Management	Learning objectives for BSc in Social Science	Assessment methods	Teaching methods
CLO1. To be able to process information and operate at multiple levels of abstraction.	BLO4.1. Students will be able to communicate reasonably in different settings according to target audience tasks and situations.	ELO4.1.Students will be able to communicate reasonably in different settings according to target audience tasks and situations	Coursework, final exam, final project.	Lecture, problem solving, homework, discussion. self-study
CLO2. To be able to decompose IT problems into parts and solve them efficiently.	BLO4.3. Students will be able to convey their ideas effectively in a written paper.	ELO4.3. Students will be able to convey their ideas effectively in a written paper	Coursework, final exam, final project.	Lecture, problem solving, homework, discussion.
CLO3. To be able to demonstrate proficiency in a software development environment.	BLO3.2. Students will be able to make decisions using appropriate IT tools.	ELO3.2. Students will be able to make decisions using appropriate IT tools	Coursework, final exam, final project.	Lecture, problem solving, homework, discussion.
CLO4. To be able to assess the correctness, design, and style of code.	BLO3.2. Students will be able to make decisions using appropriate IT tools.	ELO3.2. Students will be able to make decisions using appropriate IT tools	Coursework, midterm, final exam, final project.	Lecture, problem solving, homework, discussion.
CLO5. To be able to evaluate the project's complexity and	BLO1.2. Students will be able to conduct a	ELO3.1. Students will demonstrate proficiency	Final project, coursework.	Lecture, problem

estimate required resources.	contextual analysis to identify a problem associated with their discipline, to generate managerial options and propose viable solutions.	in common business software packages		solving, homework, discussion.

ACADEMIC HONESTY AND INTEGRITY

The ISM University of Management and Economics Code of Ethics, including cheating and plagiarism are fully applicable and will be strictly enforced in the course. Academic dishonesty, and cheating can and will lead to a report to the ISM Committee of Ethics. With regard to remote learning, ISM reminds students that they are expected to adhere and maintain the same academic honesty and integrity that they would in a classroom setting.

The course's philosophy on academic honesty is best stated as "be reasonable." The course recognizes that interactions with classmates and others can facilitate mastery of the course's material. However, there remains a line between enlisting the help of another and submitting the work of another. This policy characterizes both sides of that line.

The essence of all work that you submit to this course must be your own. Collaboration on problem sets is not permitted except to the extent that you may ask classmates and others for help so long as that help does not reduce to another doing your work for you. When asking for help, you may show your code to others, but you may not view theirs, so long as you and they respect this policy's other constraints. Collaboration on the course's final exam and test is not permitted at all. Collaboration on the course's final project is permitted to the extent prescribed by its specification.

Reasonable	Not reasonable
Communicating with classmates about problem sets' problems in English (or some other spoken language), and properly citing those discussions.	Accessing a solution to some problem prior to (re-)submitting your own.
Discussing the course's material with others in order to understand it better.	Accessing or attempting to access, without permission, an account not your own.
Incorporating a few lines of code that you find online or elsewhere into your own code, provided that those lines are not themselves solutions to assigned problems and that you cite the lines' origins.	Asking a classmate to see their solution to a problem set's problem before (re-)submitting your own. Discovering but failing to disclose to the course's head bugs in the course's software that affect scores.
Reviewing past semesters' tests and final exams and solutions thereto.	Failing to cite (as with comments) the origins of code or techniques that you discover outside of the course's own lessons and integrate into your own work, even while respecting this policy's other constraints.
Sending or showing code that you've written to someone, possibly a classmate, so that he or she might help you identify and fix a bug, provided you properly cite the help.	Giving or showing to a classmate a solution to a problem set's problem when it is he or she, and not you, who is struggling to solve it.
Turning to the course's heads for help or receiving help from the course's heads during a final exam or test.	Looking at another individual's work during the final exam or test.
Turning to the web or elsewhere for instruction beyond the course's own, for references, and for solutions to technical difficulties, but not for outright solutions to problem set's problems or your own final project.	Paying or offering to pay an individual for work that you may submit as (part of) your own.
Whiteboarding solutions to problem sets with others using diagrams or pseudocode but not actual code.	Providing or making available solutions to problem sets to individuals who might take this course in the future. Searching for or soliciting outright solutions to problem sets online or elsewhere.

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	Splitting a problem set's workload with another individual and combining your work. Submitting the same or similar work to this course that you have submitted or will submit to another. Turning to humans (besides the course's heads) for help or receiving help from humans (besides the course's heads) during the final exam or midterm. Viewing another's solution to a problem set's problem and basing your own solution on it.

COURSE OUTLINE

No.	Topic	Lectures	Seminars	Readings
1.	Exploring low-coding solutions & databases: dataverse concepts, data storing solutions, basic app user interface development.	2	2	[3] Chapter 1 [5] Dataverse documentation [6] Dataverse documentation
2.	Basic low-code application development: modifying forms, adding controls, displaying data.	2	2	2] Chapters 2 & 7
3.	Advanced Low-code application development: model driven apps, common data model integration.	2	2	[3] Chapter 2
4.	Mobile asset tracking: integrate API's, extract datasets from GPS, Barcodes and QR codes.	2	2	[2] Chapters 8 & 1
5.	Automating processes: Power Automate concepts, business processes automation.	2	2	[2] Chapter 13 [7] Power Automate documentation
	Midterm exam	2		
6.	Mixed reality integration into application: adding 3D environment tools.	2	2	[4] Timo Pertilä documentation.
7.	Building an advanced automated solution.	2	2	[9] Power Automate documentation
8.	Getting started with data visualization tools.	2	2	[10] Power Platform fundamentals [12] PowerBI documentation
9.	Using advanced tools for data visualization, modeling, and analysis: creating reports with PowerBI.	2	2	[10] Power Platform fundamentals [11] PowerBI documentation
10.	Introduction to Power Virtual Agents: building, testing, and deploying simple chatbot.	2	2	[7] Power Virtual Agents documentation

11	Enhancing Power Virtual Agents bots: using Power Automate to add actions; managing topics.	2	2	[7] Power Virtual Agents documentation [8] Power Virtual Agents documentation
				[8] Power Virtual Agents documentation
	Total hours:	**22**	**22**	
	CONSULTATIONS	2		
	FINAL EXAM	2		

FINAL GRADE COMPOSITION

Type of assignment	%
Individual Components 100%	
Course 1: Submit assignments to e-Learning	2
Course 2: Submit assignments to e-Learning	2
Course 3: Submit assignments to e-Learning	2
Course 4: Submit assignments to e-Learning	2
Course 5: Submit assignments to e-Learning	2
Course 6: Submit assignments to e-Learning	2
Course 7: Submit assignments to e-Learning	2
Course 8: Submit assignments to e-Learning	2
Chapter 9. Submit assignments to e-Learning	2
Course 10: Submit assignments to e-Learning	2
Course 11: Submit assignments to e-Learning	2
[1-5] Midterm exam	20
[1-7] Homework: individual report using own data	28
[1-11] Final Exam	30
Total:	**100**

DESCRIPTION AND GRADING CRITERIA OF EACH ASSIGNMENT

The course overall assessment and final grade involves 4 tasks, which are described below:

1. Practical **assignments** will count for the **22%** of the final mark (there will be **11** assignments in total). Presenting accomplished assignment later than indicated in the 'due date' column, reduces its 10-point grade by the number of weeks being late.

2. **Midterm assessments** are in-class open-book individual examinations in a computer classroom. Students have to solve real-life problems within the given time. Duration of the first midterm assessment is two academic hours. It covers topics 1-5 and values 20% of the final grade.

3. Results of assignments will be summarized by **homework report,** and it will count for the **22%** of the final mark. Students will be obliged to upload individual report to 'e-Learning' with respect to the specified deadline.

4. A two-hours **exam** in a written form, which will include open and multiple-choice questions on the topics discussed during the practical sessions, mostly from 'key points' at the end of each chapter. Exam covers topics 6-7 and will count for the **30%** of the final mark.

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(practical assignments, midterm exam, individual homework report) at the specified time (see, *Weekly course content*).

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ADDITIONAL REMARKS

1. Precision of composite evaluations is left intact (up to 2 decimal places) until the end of semester and only the final evaluation will be subject to rounding.

2. If a student does not participate in the homework report, his/her maximum evaluation for the course can be only 5 out of 10.

RETAKE POLICY

Retake examination (50 %). Retake will cover all the material of the course that has been covered by the midterm exam (20%) as well as the final exam (30%). Other parts of the course, i.e. homework and assignments are not subject for a retake.

REQUIRED READINGS

1. Cox, J., Lambert, J. (2013). Microsoft Access 2013: Step by Step. Redmond: Microsoft Press.
2. Weston, M. (2019). Learn Microsoft PowerApps. Birmingham: Packt Publishing Ltd.
3. Mendoza, E. (2021). Microsoft Power Apps Cookbook. Birmingham: Packt Publishing Ltd.
4. Pertilä, T. (2020) Power Apps and Mixed reality. Available online @ elearning.ism.lt.
5. Introduction to Dataverse. Available online @ elearning.ism.lt.
6. Get started using Dataverse. Available online @ elearning.ism.lt.
7. Create apps, chatbots, flows, and more with Microsoft Dataverse and Teams. Available online @ elearning.ism.lt.
8. Create bots with Power Virtual Agents. Available online @ elearning.ism.lt.
9. Automate a business process using Power Automate. Available online @ elearning.ism.lt.
10. Microsoft Power Platform Fundamentals. Available online @ elearning.ism.lt.
11. Get started with Power BI. Available online @ elearning.ism.lt.
12. Create and use analytics reports with Power BI. Available online @ elearning.ism.lt.