UNIVERSITY OF ECONOMICS - VARNA

FACULTY OF ECONOMICS

INDUSTRIAL BUSINESS AND LOGISTICS

Adopted by the FC (record № 11/ 25. 04. 2024)

Adopted by the DC (record № 9/ 16. 04. 2024)

ACCEPTED BY:

Dean:

(Assoc. Prof. Denka Zlateva, PhD)

SYLLABUS

SUBJECT: BUSINESS INTELLIGENCE AND ANALYTICAL PLATFORMS

DEGREE PROGRAMME: Business and management; BACHELOR`S DEGREE

YEAR OF STUDY: 4; SEMESTER: 7

TOTAL STUDENT WORKLOAD: 240 hours; incl. curricular 60 hours

CREDITS: 8

DISTRIBUTION OF STUDENT WORKLOAD ACCORDING TO THE CURRICULUM

TYPE OF STUDY HOURS	**WORKLOAD, hours**	**TEACHING HOURS PER WEEK, hours**
CURRICULAR: incl. • LECTURES • SEMINARS / LAB. EXERCISES	 30 30	 2 2
EXTRACURRICULAR	180	-

Prepared by:

1. ……..
(Assoc.Prof. Yanka Aleksandrova, PhD)

2. ……
(Chief.Assist.Prof. Latinka Todoranova, PhD)

Head of department
of Informatics: ……
(Prof. Julian Vasilev, PhD)

I. ANNOTATION

The discipline helps students to master professional competencies related to knowledge to extract data from different sources, prepare, model, and visualize data using business intelligent and analytical platforms such as Microsoft Power BI and Qlik Sense, data storytelling, creation of interactive dashboards and visualizations with embed artificial intelligence (AI).

During the training in the discipline students gain knowledge and skills that can be used to expand and develop their professional qualifications. Participating in their training both in the individual assignments and team coursework, they acquire competencies in relation to the need to take responsibility and demonstrate capabilities to manage complex professional activities.

In the course of training, the following key competences are applied and developed, according to the Recommendation of the Council of the European Union of 22 May 2018:

- *Digital competence. The acquired in-depth knowledge in the field of business intelligent platforms helps students acquire skills to build intelligent and analytical applications;*
- *Entrepreneurial competence. In applying the knowledge and skills obtained, students will be able to build complete applications to support decision-making at different levels of business management.*

II. THEMATIC CONTENT

№	TITLE OF UNIT AND SUBTOPICS	NUMBER OF HOURS		
		L	**S**	**L.E.**
Theme 1. BUSINESS INTELLIGENCE SYSTEMS		**3**		
1.1.	Business intelligence systems – nature and characteristics.	1		
1.2.	Architecture of business intelligence systems.	1		
1.3.	Data warehouse. Multidimensional data model.	1		
Theme 2. BUSINESS INTELLIGENCE AND ANALYTICAL PLATFORMS		**2**		
2.1.	Nature and functional capabilities of business intelligence and analytical platforms	1		
2.2.	Trends in the development of business intelligence and analytical platforms.	1		
Theme 3. Data modeling in Microsoft Power BI		**6**	**8**	
3.1.	Extract data from various sources. Clean, transform and load data with Power Query.	2	4	
3.2.	Creating relationships, groups, and hierarchies.	2	2	
3.3.	Calculated columns, tables, and measures with DAX language.	2	2	
Theme 4. Data visualization in Microsoft Power BI		**9**	**9**	
4.1.	Creating and formatting interactive dashboards	4	4	
4.2.	Advanced formatting. Filtering, slicing, drill-down and drill-through. Data storytelling.	3	3	
4.3.	AI powered visuals	2	2	
Theme 5. Data modeling in Qlik Sense		**4**	**8**	
5.1.	Creating business intelligence and analytical applications in Qlik Sense Cloud	2	4	
5.2.	Extract data from various sources. Defining associations.	1	2	
5.3.	User dimensions and measures. Aggregating data at different levels.	1	2	
Theme 6. Data visualization in Qlik Sense		**6**	**5**	
6.1.	Creating and formatting data visuals.	2	2	
6.2.	Filtering data. Alternate states.	2	1	
6.3.	Data storytelling.	2	2	
	Total:	**30**	**30**	

III. FORMS OF CONTROL:

№	TYPE AND FORM OF CONTROL	Number	extracur-ricular, hours
1.	**Midterm control**		
1.1.	Practical assignment in Power BI	**1**	**40**
1.2.	Practical assignment in Qlik Sense	**1**	**40**
1.3.	Test	**1**	**20**
	Total midterm control:	**3**	**100**
2.	**Final term control**		
2.1.	Examination (test)	**1**	**80**
	Total final term control:	**1**	**80**
	Total for all types of control:	**4**	**180**

IV. LITERATURE

REQUIRED (BASIC) LITERATURE:

1. Kolokolov, A., Zelensky, M., Data Visualization with Microsoft Power BI, O'Reilly, 2024, ISBN 978-1-098-15272-7
2. Labbe, P., Anjos, C., Solanki, K., DiMaso, J. Hands-On Business Intelligence with Qlik Sense: Implement self-service data analytics with insights and guidance from Qlik Sense experts, Packt Publishing. 2019. ISBN 978-1-78980-094-4.
3. Sirrup, J., Weinandy, T., Artificial Intelligence with Microsoft Power BI, O'Reilly, 2024, ISBN 978-1-098-11275-2

RECOMMENDED (ADDITIONAL) LITERATURE:

1. Lachev, T. Applied Microsoft Power BI, Prologika Press, 2022, ISBN 9781733046138
2. Mahler, M., Vitantonio, J., Mastering Qlik Sense, Packt Publishing, 2018, ISBN 978-1-78355-402-7
3. Raimato, P., The Ultimate Power Query Cookbook for Power BI and Excel: Leveraging Power Query for collecting, combining and transforming your data, BPB Publications, ISBN 9355517394