



SYLLABUS
Business Data Analytics
(data driven decision making)
Academic year 2025-2026

1. Information regarding the program

1.1. Higher education institution	Universitatea Babeș Bolyai
1.2. Faculty	Business
1.3. Department	Business
1.4. Field of study	Business Administration
1.5. Study cycle	Master
1.6. Study programme/Qualification	International Business Administration/Master degree
1.7. Form of education	Full time

2. Information regarding the discipline

2.1. Name of the discipline	Business Data Analytics(data driven decision making)	Discipline code	IME0062
2.2. Course coordinator	Erik BARNA		
2.3. Seminar coordinator	Erik BARNA		
2.4. Year of study	2	2.5. Semester	3
		2.6. Type of evaluation	C
		2.7. Discipline regime	elective

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

3.1. Hours per week	2	of which: 3.2 course	1	3.3 seminar/laboratory	1
3.4. Total hours in the curriculum	28	of which: 3.5 course	14	3.6 seminar/laborator	14
Time allotment for individual study (ID) and self-study activities (SA)					hours
Learning using manual, course support, bibliography, course notes (SA)					14
Additional documentation (in libraries, on electronic platforms, field documentation)					10
Preparation for seminars/labs, homework, papers, portfolios and essays					11
Tutorship					2
Evaluations					2
Other activities:					8
3.7. Total individual study hours					47
3.8. Total hours per semester					75
3.9. Number of ECTS credits					3

4. Prerequisites (if necessary)

4.1. curriculum	
4.2. competencies	

5. Conditions (if necessary)

5.1. for the course	classroom with computer and projector;
5.2. for the seminar /lab activities	classroom with computer and projector;



6.1. Specific competencies acquired

Professional/essential competencies	<ul style="list-style-type: none">• C1 - in-depth knowledge and systematic use of the set of information resulting from the theoretical, methodological, legislative, and practical developments specific to business administration at international level• C2 - higher ability to substantiate and assess strategies and decision alternatives, as well as their selection and implementation in business administration at international level/ within multinational corporations
Transversal competencies	<ul style="list-style-type: none">• CT2. Identification of roles and responsibilities in a team and their application within companies• CT3. Using the opportunities offered by life-long learning for continuous adaptation to changes in the business environment.

6.2. Learning outcomes

Knowledge	<p>The student has complex knowledge of accounting, processing, and analysis of economic and financial information required for an effective organization and management of units.</p> <ul style="list-style-type: none">✓ know how to use spreadsheet data creation and editing software tools to perform mathematical calculations, organize data and information, create data-driven charts, and retrieve them.✓ know how to use dedicated software for data analysis, including statistics, spreadsheets and databases. Explore the possibilities to prepare reports for administrators, superiors or customers.
Skills	<p>The student demonstrates a high ability to understand the complexity of macroeconomic policies and is thus able to infer their implications at microeconomic level.</p> <ul style="list-style-type: none">✓ assesses the state of a business on its own and in relation to the competitive field of activity, conducts research, putting data in the context of the company's needs and determining areas of opportunity
Responsibility and autonomy:	<p>The student can perform complex professional tasks, under conditions of autonomy and professional independence.</p>



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

7.1 General objective of the discipline	<ul style="list-style-type: none">To provide students with the knowledge and practical skills required to collect, process, analyze, and visualize business data in order to support effective and objective decision-making.The course emphasizes the integration of traditional data analytics methods with modern AI tools to enhance business performance, risk assessment, and strategic planning in an increasingly data-driven and digital business environment.
7.2 Specific objective of the discipline	<ul style="list-style-type: none">To develop the ability to collect, clean, and structure business data for analysis and reporting purposes;To understand and apply key performance indicators (KPIs) and analytical frameworks used in business decision-making;To gain hands-on experience with data analytics tools such as Excel, Power BI, and introductory machine learning platforms;To evaluate and interpret statistical data in a business context to support strategic and operational decisions;To explore the practical application of AI tools (e.g., generative models, language models) in business environments;To assess the ethical, legal, and strategic considerations when using AI-driven tools in organizational decision-making;To develop the ability to present data-driven insights effectively to stakeholders through visualizations and structured reports.

8. Content

8.1 Course	Teaching methods	Remarks
Week 1: The Role of Data in Business Decision-Making	Presential course	<ul style="list-style-type: none">Types of data in organizationsDecision-making processes: descriptive, predictive, and prescriptive analyticsKPIs and measurement frameworks
Week 2: Analytics Tools – Excel, Power BI, Google Looker Studio	Presential course	<ul style="list-style-type: none">Introduction to data visualizationDashboards and performance indicatorsStructuring data for analysis
Week 3: Statistical Fundamentals for Business Analytics	Presential course	<ul style="list-style-type: none">Means, variances, correlationsGraphical representations and interpretationHow to avoid misleading conclusions
Week 4: Machine Learning in Analytics (Introductory Level)	Presential course	<ul style="list-style-type: none">Types of ML: regression, classification, clusteringReal-world applications of ML in companiesAI as a decision support tool
Week 5: Generative AI in Business Analytics	Presential course	<ul style="list-style-type: none">GPT & LLMs in automatic reporting



		<ul style="list-style-type: none">• Examples of automation for reports/summaries/decisions• IP, ethics, and risks
Week 6: AI in Financial Analytics and Risk Assessment	Presential course	<ul style="list-style-type: none">• Credit scoring models• Fraud detection using AI• Sensitivity analysis
Week 7: Final Project + Integration	Presential course	<ul style="list-style-type: none">• Business scenario: You have 30 days to turn around a failing company using data• How to present data-driven insights• Integrating technology into strategic thinking
Bibliography: Will be offered for each course and contain links to the latest relevant news.		
8.2 Seminar / laboratory	Metode de predare	Observații
Week 1: The Role of Data in Business Decision-Making	interactive discussion, applications, case studies	Seminar: Case study – How strategic decisions were made based on data
Week 2: Analytics Tools – Excel, Power BI, Google Looker Studio	interactive discussion, applications, case studies	Seminar: Building a sales dashboard and performance report
Week 3: Statistical Fundamentals for Business Analytics	interactive discussion, applications, case studies	Seminar: Practical exercises + mini market research assignment
Week 4: Machine Learning in Analytics (Introductory Level)	interactive discussion, applications, case studies	Seminar: Hands-on with Orange Data Mining / RapidMiner or Google AutoML
Week 5: Generative AI in Business Analytics	interactive discussion, applications, case studies	Seminar: Using ChatGPT to generate reports and automate insights
Week 6: AI in Financial Analytics and Risk Assessment	interactive discussion, applications, case studies	Seminar: Case study on real (or synthetic) data – building a credit scoring model
Week 7: Final Project + Integration	interactive discussion, applications, case studies	Final presentations (individual or group) + applied feedback
Bibliography: Will be offered for each course and contains links to the latest relevant news.		

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

- The content of the lecture is very much linked with what is being taught in other universities in Romania and around the world and in Business Schools that are accredited by the NIBS and AACSB.
- The content of the curricula has been discussed with corporate partners, consulting companies, representatives from multinational companies but also with university colleagues from abroad.







10. Evaluation

- The same evaluation criteria are maintained for all exams sessions. The components of the evaluation process carried out during the semester cannot be recovered/redone in the examination sessions.
- To be able to accumulate the points obtained during the semester, it is mandatory to obtain a minimum of 5 (five) in the final exam (written/oral).

Activity type	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of final grade
10.4 Course	Written test. Applications, case studies, multiple choice questions	Final exam (during the final week of the semester)	80%
10.5 Seminar/laboratory	Written project	Projects, reports (during the semester)	20%
10.6 Minimum standard of performance			
<ul style="list-style-type: none">• Knowledge of the fundamental concepts and their applications in case studies, questions;• Basic understanding and interpretation of the different AI techniques.			

11. Labels ODD (Sustainable Development Goals)¹

	General label for Sustainable Development							
								

Date:
08.04.2025

Signature of course coordinator
Erik BARNA

Signature of seminar coordinator
Erik BARNA

Date of approval:
10.04.2025

Signature of the head of department
Ioan Cristian CHIFU

¹ Keep only the labels that, according to the [Procedure for applying ODD labels in the academic process](#), suit the discipline and delete the others, including the general one for *Sustainable Development* – if not applicable. If no label describes the discipline, delete them all and write „Not applicable.”.