Facultatea de Business
Str. Horea nr.7
Cluj-Napoca, 400174
Tel.: 0264599170
Fax: 0264590110
E-mail: secretariat.tbs@ubbcluj.ro
Site: tbs.ubbcluj.ro

SYLLABUS
Academic year 2024-2025

1. Information regarding the programme

1.1. Higher education institution	Babeş-Bolyai University of Cluj-Napoca
1.2. Faculty	Business
1.3. Department	Hospitality Services
1.4. Field of study	Business Administration
1.5. Study cycle	Master
1.6. Study programme / Qualification	Administrarea Afacerilor Internaționale (cu predare în limba engleză) /International Business Administration

2. Information regarding the course

2.1. Name of the course	Sisteme informatice pentru asistarea deciziei/ Decision Support Systems						
2.2. Code	IME0074						
2.3. Course coordinator		Assoc. Prof. Rozalia Veronica Rus					
2.4. Seminar coordinator		Assoc. Prof. Rozalia Veronica Rus					
2.5. Year of study	**2**	2.6. Semester	**4**	2.7. Type of evaluation	**E**	2.8. Type of course	**compulsory**

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

3.1. Hours per week	**3**	Of which: 3.2. lecture	**1**	3.3 seminar/laboratory	**2**
3.4. Total hours in the curriculum	**36**	Of which: 3.5. lecture	**12**	3.6. seminar/laboratory	**24**

Time allotment:	hours
Learning using manual, course support, bibliography, course notes	20
Additional documentation (in libraries, on electronic platforms, field documentation)	20
Preparation for seminars/labs, homework, papers, portfolios and essays	50
Tutorship	12
Evaluations	2
Other activities:	10

3.7. Total individual study hours	114
3.8. Total hours per semester	150
3.9. Number of ECTS credits	**6**

4. Prerequisites (if necessary)

4.1. curriculum	
4.2. competencies	

5. Conditions (if necessary)

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5.1. for the course	Classroom with multimedia projector and computer connected to the Internet. Students need a Microsoft institutional account, Microsoft Teams application, Microsoft Office 365.
5.2. for the seminar /lab activities	Classroom with multimedia projector and computer connected to the Internet. Students need a Microsoft institutional account, Microsoft Teams application, Microsoft Office 365. Other tools: Power BI, Tableau

6. Specific competencies acquired

Professional competencies	• 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 (C2). • 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 (C1)
Transversal competencies	• Identification of roles and responsibilities in a team and their application within companies (CT2)

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

7.1. General objective of the course	• Understand the need for computerized support in managerial decision making. • Learn concepts and practices currently used in Business Intelligence. • Understand the development of systems for providing decision-making support. • Recognize the evolution of decision support systems
7.2. Specific objective of the course	• Understand the nature and purpose of data driven Decision Support Systems (DSS); • Understand the role of DSS in decision making process; • Identify and use different ICT solutions for data analysis and decision making. • learn how to extract actionable insights from data and enhance decision-making processes.

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8. Content

8.1. Course		Teaching Method	Remarks
1.	Introduction to Business Intelligence (BI concept, Decision Support Systems, the role of BI in data analysis and in decision making, Evolution and trends in BI	Interactive lecture, discussions, explanation	1 course
2.	Data Warehousing and ETL Processes (Data Warehouse – concept, architecture, multidimensional model, case studies on successful Data Warehousing, Extract, Transform, Load (ETL) Processes, Data Integration and Cleansing). Creating effective data models for BI.	Interactive lecture, discussions, explanation	2 courses
3.	OLAP (Online Analytical Processing): multidimensional data analysis, OLAP tools. Data Modeling and Dimensional Design	Interactive lecture, discussions, explanation	1 course
4.	Data Mining Process, data mining applications in business	Interactive lecture, discussions, explanation	1 course
5.	Data Visualization and Dashboards: Building interactive dashboards using BI tools.	Interactive lecture, discussions, explanation	1 course
6.	Cloud-Based BI Solutions	Interactive lecture, discussions, explanation	2 courses
7.	Business Intelligence for Decision Support		2 courses
8.	Integration of Big Data with BI	Interactive lecture, discussions, explanation	1 course
9.	Emerging Trends in BI		1 course

Bibliography	1. Baltzan, Paige (2021). Business driven information systems. Seventh Edition.McGraw-Hill.
	2. Bulusu, L., & Abellera, R. (2020). AI meets BI: artificial intelligence and business intelligence. CRC PressLarsen,
	3. K. R., & Becker, D. S. (2021). Automated machine learning for business. Oxford University Press.
	4. Sharda, R., Delen, D., & Turban, E. (2021). Analytics, data science, & artificial intelligence: Systems for decision support. Harlow: Pearson.
	5. Turban, E., Pollard, C., & Wood, G. (2021). Information Technology for Management: Driving Digital Transformation to Increase Local and Global Performance, Growth and Sustainability. John Wiley & Sons.
	6. Few, S. (2006). Information dashboard design: The effective visual communication of data. O'Reilly Media, Inc.

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	7. Winston, W. (2019), Microsoft Excel 2019 Data Analysis and Business Modeling, Ed. Microsoft Press.

8.2. Seminar/laboratory		Teaching Method	Remarks
1.	Introduction – presentation of the main objectives of the laboratory, presentation of the evaluation method for the laboratory. Data analysis in the context of business – use cases and impact.	case study, discussions, explanation, applications	1 laboratory
2.	Reporting software introduction – Power BI. Basic and advanced visualizations based on a ready-to-use dataset.	applications, step-by-step training	1 laboratory
3.	Reporting software introduction – Tableau. Basic and advanced visualizations based on a ready-to-use dataset.	applications, step-by-step training	1 laboratory
4.	Data extraction (databases, webscraper.io, main input file types).	case studies, applications	1 laboratory
5.	Consultancy for the use case (asking the right questions to determine what KPIs we'll do the analysis on). Data validation and cleaning (anomaly identification, handling anomalies).	case studies, applications	1 laboratory
6.	Data modeling, conditional columns, formulas. Table relationships (OTM, MTM, OTO). Star schema.	applications, step-by-step training	1 laboratory
7.	Reporting UI/UX, filters, buttons, shortcuts for users. Basic data governance conventions.	applications, step-by-step training	1 laboratory
8.	Visualizations	applications, step-by-step training	1 laboratory
9.	Storytelling with data	applications, case studies	1 laboratory
10.	BI architecture	applications, case studies	1 laboratory
11.	Basics of data engineering	applications, case studies	1 laboratory
12.	Projects presentation		1 laboratory
Bibliography	1. Baltzan, Paige (2021). Business driven information systems. Seventh Edition.McGraw-Hill. 2. Bulusu, L., & Abellera, R. (2020). AI meets BI: artificial intelligence and business intelligence. CRC PressLarsen, 3. K. R., & Becker, D. S. (2021). Automated machine learning for business. Oxford University Press.		

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

The content of the course is correlated with the content of similar courses offered by universities from our country and from abroad. To adapt the content of this course to the labor market needs we had discussions with students, alumni and companies.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation method	10.3 Percentage in the final grade
10.4. Course	• Understanding the terminology	• Final evaluation: multiple choice test (20 questions) from theory	**40 %**
10.5. Laboratory activities	• Ability to use specific software solutions; • Practical utilization of learnt notions; • Applying the learnt methods and tools; • Practical skills in the field; • Interest and interactive participation.	• In-class exercises and group/team assignments • Project presentation The assignments will be sent at deadlines during the semester. 1 team should not have more than 3 members.	**60 %**

10.5. Minimum Performance Standard
• Knowledge of fundamental specific concepts of data driven Decision Support Systems; • Ability to create dashboards in Microsoft Power BI or in similar software. **Observations** • The project can be presented only during the semester (in week 12);

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- The project will be carried out in a team (maximus 3 students/project);
- Students will be able to participate in the final exam only if they have sent the assignments on deadline;
- To complete this discipline, it is necessary to obtain a grade of at least 5 (five) at the theoretical test;
- The evaluation is the same for all the examination sessions.

Date	Course coordinator	Laboratory coordinator
	Assoc. Prof. Rozalia Veronica Rus	Sebastian Popescu
23.04.2024		

	Date of approval	Head of department
		Assoc. Prof. Marius Bota
22.05.2024		