Managerial Analytics

General data

Course code:	M23VZC11E
ECTS credits:	6
Type of the course:	Elective course (C)
Semester:	Spring Semester (3)
Course restrictions:	-
Course leader (with availabilities):	*Dr. Alexandra Posza* *Assistant Professor* *+ 36 72 501 599/ 23141* *poszaa@ktk.pte.hu* *office: B213*
Further lecturer(s) (with availabilities):	*Dr. Mónika Kuti* *Associate Professor* *+ 36 72 501 599/ 63124* *kutim@ktk.pte.hu* *office: B211*

1. Description and aims

This course aims to provide students with the tools and techniques necessary to apply data analytics in managerial decision-making. Through exploring key concepts, practical applications, and real-world case studies, students will gain an in-depth understanding of how analytics can drive performance and strategic outcomes across various business functions.

2. Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, students should be able to:

CILO 1. Define and explain the fundamental concepts of managerial analytics and their role in business operations (PILOs 1,2);

CILO 2. Analyze stakeholder needs and expectations using data-driven insights to enhance decision-making (PILO 4);

CILO 3. Apply analytical techniques for effective cost management, strategic financial planning, and enhancing organizational performance (PILO 6);

CILO 4. Evaluate risks and develop data-driven HR and operational strategies (PILO 5);

CILO 5. Design and implement actionable, analytics-based recommendations for organizational challenges (PILO 5).

(The remarks in brackets express each CILO's connection to the Programme Intended Learning Outco mes (PILOs).)

3. Content, schedule

1. Introduction to Managerial Analytics
2. Managerial KPIs and Performance Management
3. Stakeholder Analysis
4. Sustainability and ESG Analytics
5. Time Series Analysis
6. Managerial Accounting - Cost controlling
7. Financial Planning for Managers: Budgeting and Beyond
8. Financial Analytics for Managers I.: Strategic Insights for Decision-Making
9. Financial Analytics for Managers II.: Driving Performance and Growth
10. Risk Management with Data
11. HR Controlling and Analytics
12. Operational Controlling and Analytics

4. Learning and teaching strategy, methodology

Principal teaching methodologies:

Interactive lectures: Core concepts and theoretical frameworks are introduced during lectures, emphasizing student engagement and participation. (CILOs 1, 2)

Professional in-class discussion: Discussions are strongly aligned with lecture topics, where students are encouraged to pose questions, provide comments, and engage in meaningful dialogues. Moderated by the course leader, these discussions foster a deeper understanding of analytics concepts and their managerial implications. (CILOs 1, 2)

Case studies and Practical Applications: Real-world business scenarios are integrated into the course to develop critical thinking and problem-solving skills. Students work individually and in teams to analyze data, propose solutions, and present findings. (CILOs 2, 3, 4, 5)

In-class presentations: Students work in teams to present practical solutions to analytics challenges, demonstrating their analytical skills and strategic thinking. Feedback from peers and instructors helps refine their approaches. (CILOs 2, 3, 4, 5)

5. Assessment

Formative assessment elements:

Formative assessment is an integral part of the learning process. During the course, students are highly encouraged to participate actively in classes via discussions, group activities and problem solutions. They continuously receive feedback from course leaders.

Summative assessment elements:

Individual Assessment	80%	**Group Assessment**	20%

Name of the element	Weight	Type	Details	Retake opportunity	Req.*	Related CILOs

Class work	20%	individual written coursework	Solving smaller business challenges introduced in lectures and writing a brief analysis of a real-world case study.	No	Yes	2,3,4,5
Group presentation	20%	oral group work coursework	Presenting an analytics-driven solution for business problems	No	Yes	4,5
Complex businesss problem solution	60%	individual written courework	In-depth analysis and solution development for a real-world, multifaceted business challenge.	One retake opportunity	Yes	1,2,3,4,5

** Req.: Completion of the element is required to pass the course, irrespective of the performance in other elements.*

6. Learning materials

- Essential
  - Merchant, K. - Van Der Stede (2024): Management Control Systems, Pearson.
  - Davis, C. E. – Davis, E. (2020): Managerial Accounting, 4. ed, Wiley.
  - Marr, B. (2018): Data-Driven HR: How to Use Analytics and Metrics to Drive Performance. Kogan Page.

- Recommended
  - Weygandt, J. J. – Kimmel, P. D. – Aly, I. M. (2021): Managerial Accounting – Tools for Business Decision-making. 6 ed., Pearson.
  - Marr, B. (2012): Key Performance Indicators (KPI): The 75 measures every manager needs to know, Pearson.
  - Alexander, J. (2018): Financial Planning & Analysis and Performance Management, 1 ed, Wiley.

7. Further information

International aspects embedded with the course
The course is designed to provide a global perspective, integrating international standards and best practices. Students analyze case studies from multinational organizations and address challenges across industries.
Ethics, Responsibility & Sustainability (ERS) aspects embedded with the course
Topics are aligned with ethical standards and SDG 9 (Industry, Innovation, and Infrastructure), focusing on sustainability and responsible business analytics.
Connections to the world of practice of the course
Real-world case studies are embedded in the course to equip students with the skills needed to tackle complex business challenges using analytics.