Syllabus
2025 - 2026

TECHNICAL SHEET OF THE SUBJECT

Data of the subject

Subject name	People Analytics
Subject code	E000013743
Mainprogram	Máster Universitario en Análisis de Negocio / Master in Business Analytics por la Universidad de Deusto y la Universidad Pontificia Comillas
Involved programs	Máster Universitario en Análisis de Negocio / Master in Business Analytics [First year]
Level	Posgrado Oficial Master
Quarter	Semestral
Credits	3,0 ECTS
Type	Optativa
Department	Departamento de Gestión Empresarial
Coordinator	María Jesús Belizón Cebada
Office hours	On request
Course overview	The course People Analytics (ECTS) aims to strengthen decision-making in people management throughout the employee lifecycle by analyzing people data. This enables managers to address HR-related problems using data as a key driver. People Analytics is the discipline that uses employee data and statistical techniques to extract valuable business insights, allowing better business decisions based on employees' skills, behavioral patterns, and professional networks.

Teacher Information

SPECIFIC DATA OF THE SUBJECT

Contextualization of the subject

Contribution to the professional profile of the degree

The course **Data Analytics for Talent Management / People Analytics (6 ECTS)** aims to strengthen **decision-making in people management across the entire employee lifecycle** through the analysis of organizational workforce data. In this way, managers will be able to address challenges related to this function by **using data as a key driver of decision-making**.

People Analytics is the discipline that, by using **employee data and statistical techniques**, extracts valuable insights for the business, enabling **better business decisions based on employees' skills, behaviors, and professional networks**. By applying **HR metrics in a professional and systematic way**, companies can gain a **competitive advantage over organizations that have not yet begun to engage in this field**.

This course is designed for students of the Master in Business Analytics. Assuming prior knowledge of data analysis techniques, it focuses on offering students a humanistic view of using data analytics for people management—one that goes beyond technical competence and supports solid decision-making within ethical boundaries, aiming to generate positive impact for all stakeholders.

Learning questions addressed in the course:

1. How can People Analytics contribute to strategic decision-making in talent management and the achievement of business objectives?

2. What are the main challenges in implementing People Analytics in organizations, and which factors can accelerate its adoption?
3. What types of HR problems can be solved using data, and how can relevant analytical questions be formulated to address them?
4. How do technology and HR systems (HRIS, ATS, LMS) influence the collection, analysis, and use of data for People Analytics?
5. How can data visualization and storytelling improve the communication of insights in people management?
6. What impact does People Analytics have across the employee lifecycle, from recruitment to talent retention and development?
7. What are the main ethical and regulatory risks associated with the use of People Analytics, and how can they be mitigated to ensure responsible data management?

Prerequisites

Prior knowledge on statistical tecniques and python programming language.

Competencies - Objectives

THEMATIC BLOCKS AND CONTENTS

Contents - Thematic Blocks

Module 1: Introduction to People Analytics and its Impact on Talent Management

- Concept, components, and evolution of People Analytics
- Building a People Analytics team: skills and management
- Implementing and managing People Analytics: challenges and accelerators
- Success cases in leading companies

Module 2: Fundamentals of Data Analysis in HR

- HR problems addressed through People Analytics
- Formulating relevant questions for HR and business
- Types of data in talent management
- HR metrics (KPIs, OKRs)
- Key business metrics in People Analytics
- Importance of data quality

Module 3: HR Technology and Systems

- Use of technology and AI in HR: process automation vs. insight generation
- HR data systems: HRIS, ATS, LMS, etc.
- Technological integration in HR: challenges and accelerators
- Internally developed People Analytics solutions
- Self-reporting and dashboards
- Use of AI algorithms in HR

Module 4: Practical Applications of People Analytics in the Employee Lifecycle

- A series of people analytics use cases will be provided

Module 5: Measuring impact of People Analytics Projects

- Action plans based on data insights
- Operational impact of People Analytics
- Impact on the continuous improvement of HR practices and processes
- Strategic impact of People Analytics

Module 6: Ethics, Privacy, and Regulatory Compliance in People Analytics

- The ethical importance of human judgment in people management decision-making
- Regulations on the use of AI and algorithms in companies
- Data protection and privacy regulations (GDPR, LOPD)
- Transparency and ethics in the use of employee data
- How to prevent algorithmic discrimination in HR

TEACHING METHODOLOGY

General methodological aspects of the subject

In-class Methodology: Activities

This course is designed for students in the **Master's in Business Analytics**. Building on prior knowledge of **data analysis techniques**, it focuses on providing students with a **humanistic perspective on the use of data analytics in people management,** one that goes beyond technical competence and supports **sound decision-making within ethical boundaries**, with the aim of generating a **positive impact for all stakeholders**.

The course will combine **lectures on the main thematic blocks** with **practical sessions** in which **statistical techniques will be applied** to shed light on and propose solutions to **specific problems arising in people management**.

Lectures. In these sessions, the instructor will present the main course content in a **clear, structured, and engaging manner**, typically supported by **audiovisual resources**. The most important aspects will be emphasized to facilitate students' **independent learning**, and time will be devoted to addressing **students' questions and suggestions**. Learning is ultimately the responsibility of the student and cannot be replaced by the instructor. In lectures, professors will focus on the **most important and/or most complex topics**. Students are expected to **prepare the material in advance before it is presented in class**. To ensure that students meet this requirement, instructors may conduct **short exercises before the presentation of the topics**. Similar exercises may also be conducted **at the end of the class** to assess students' understanding of the material.

Participatory Expository Sessions. These sessions involve presentations in which the instructor explains the **basic concepts**, while students actively and collaboratively participate by **discussing and debating unclear points or relevant nuances** to ensure proper understanding of the content. The sessions will include **dynamic presentations** and **structured or spontaneous student participation** through a variety of activities, as well as **forums based on audiovisual materials**. The **first minutes of each class** will be used to place the session's content within the **broader context of the course**, linking it to previous sessions. The **objective of the lesson** will then be introduced (i.e., the practical relevance of the topic), followed by the presentation of the **essential theoretical concepts** and their **practical applications in organizations**.

Case Analysis and Resolution. Students will analyze and solve cases proposed by the instructor, based on **short readings, specially prepared materials, or other types of data and information** that allow them to **apply the theoretical knowledge acquired in practice** and foster the **development of their argumentative and analytical skills**. These cases are based, whenever possible, on **professional materials adapted to the course**, with the aim of training students to **address real-world problems** and develop the ability to **respond effectively to unexpected situations and challenges**. This work will **commonly be carried out in teams**.

Public Presentation of Topics or Assignments. Students will present and defend their work before the instructor and their classmates. These presentations may take place **individually or in groups**. Assessment will consider the **conceptual organization of the presentation, mastery of the subject matter, clarity of exposition, and the coherence and rigor of the different stages of the presentation**. In the case of **group presentations**, the **active collaboration of each team member** will also be evaluated.

Non-Presential Methodology: Activities

Independent Study and Further Reading. Students will independently review and expand the course materials in order to **understand, reinterpret, and retain scientific content**, with a view to its **possible application in their professional field**. This includes the **individual reading of texts (bibliography) and various types of materials** such as books, journals, academic articles, press publications, online resources, and reports on practical experiences related to the topics studied. Students will find **documentation, session materials, and practical exercises** in the **University's Resource Portal**.

Academic Tutoring. Individual or small-group tutoring sessions will be available to help resolve **questions or difficulties that arise during the learning process** or in the **development of the corresponding competencies**, as well as to **monitor students' progress in their assignments**.

Group Work. This cooperative learning method involves assigning students to **teams** and proposing a task that requires **research, information sharing, and the joint use of resources** in order to achieve a **common objective**. Individual goals are achieved **if and only if the other team members achieve theirs**, creating a strong **interdependence among team members** in reaching the learning goals.

Structured Reading. Students will read and analyze **relevant texts**, accompanied by different tasks designed to **assess reading comprehension**, either **individually or in groups**.

SUMMARY STUDENT WORKING HOURS

ACTIVITY	FACE-TO-FACE CLASSROOM TIME
LECTURES	13
GROUP WORK	11
PRESENTATIONS	6

ACTIVITY	COURSEWORK TIME
SELF-GUIDED STUDY AND READINGS	30
GROUP WORK	15
TUTORIALS	15

EVALUATION AND CRITERIA

ASSESSMENT METHOD	DESCRIPTION	WEIGHTING
Final Exam. Multiple-choice final exam (MCQ) covering the theoretical and practical knowledge included in the course. The final exam must be passed in order to pass the course overall.	This exam will consist of **60 multiple-choice questions**, each with **four possible answer options**, of which **only one is correct**. The exam will last **60 minutes** and will be taken in the **faculty's computer labs**, specifically on computers equipped with **NETOP**, our **online exam proctoring software**.	50%
	Attendance will account for 10% of the	

Attendance and Participation. This assessment method combines **class attendance**, which will be recorded regularly and rigorously by the instructor, with the **student's overall participation in class**, including their **attitude toward the instructor and classmates**, as well as the **quality of their contributions**.	grade and **participation for 5%**. The **General Regulations of Universidad Pontificia Comillas** state the following: "Failure to attend more than one third of the in-person hours of a course, or even a smaller number if established in the academic regulations of the School, may result in the student being **unable to take the exam in the ordinary examination session of the same academic year**."	15%
Midterm Exams. Throughout the semester, in order to facilitate students' study and serve as preparation for the final exam, **multiple-choice midterm tests (MCQ)** will be administered. Each test will consist of 15–**20 questions**. These tests will take place **after the completion of each topic**, allowing students some **time to prepare beforehand**.	The **level of theoretical and applied knowledge** of the content covered in each topic of the course will be assessed.	15%
Group Work (Use Cases). Throughout the semester, students will work on different **People Analytics use cases**, which they will have to **submit for evaluation**. These use cases will be **developed in groups**.	The **evaluation criteria for the use cases** are as follows: **Accuracy and completeness** in responding to the assignment provided by the instructor. **Statistical rigor** in the analysis conducted. **Quality of the data analysis presentation.** **Development of conclusions and practical, actionable, and feasible solutions** for problem-solving based on the data.	20%

Ratings

Students Who Fail the Course in the Ordinary Examination Session:

Students who fail the exam but pass the rest of the assessment components:

They must **retake the multiple-choice exam (MCQ)**, which will be **different from the exam in the ordinary session**. The result will then be **combined with the rest of the course grades (50%)**.

Students who pass the exam but fail other assessment components:

They must **submit the required assignments determined by the course instructor** to compensate for the missing components, **subject to approval by the course coordinator**. The corresponding average grade will then be calculated.

Students who fail all assessment components, either by failing the exam or not attending it:
They must complete the **practical use cases (50%)** and take the **final exam (50%)**.

BIBLIOGRAPHY AND RESOURCES

Basic Bibliography

Edwards, M. R. and Edwards, K. (2024) Predictive HR Analytics: Mastering the HR Metric. Kogan Page: London, United Kingdom.

Bondarouk, T. & Fisher, S. (2020) Encyclopedia of Electronic HRM. De Gruyter Odelbourg: Berlin, Germany.

Martens, D. (2022) Data Science Ethics: Concepts, Techniques and Cautionary Tales. Oxford University Press: Oxford, United Kingdom.