



COMILLAS

UNIVERSIDAD PONTIFICIA

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CIHS

GUÍA DOCENTE

2025 - 2026

FICHA TÉCNICA DE LA ASIGNATURA

Datos de la asignatura

Nombre completo	Medición de la Sostenibilidad/ Measuring Sustainability
Código	E000014033
Título	Grado en Análisis de Negocios / Business Analytics por la Universidad Pontificia Comillas
Impartido en	Grado en Análisis de Negocios/Bachelor in Business Analytics [Tercer Curso]
Nivel	Reglada Grado Europeo
Cuatrimestre	Semestral
Créditos	6,0 ECTS
Carácter	Obligatoria (Grado)
Departamento / Área	Departamento de Gestión Empresarial
Responsable	Estela Díaz & Amparo Merino
Descriptor	Sustainability challenges are among the most important sources of risk in our time. They require a significant redefinition of business models, as well as of the notions of economic prosperity, equality, government regulation, and international relations. To implement these changes, measuring sustainability is crucial, since it allows for assessing and comparing sustainability performance across organizations and regions. However, the complexities involved in sustainability measurement raise questions of reliability, legitimacy, and transparency. This course critically examines different frameworks and metrics to assess, monitor, and disclose sustainability impacts and performance. Given that the financial industry stands out as a crucial user and provider of sustainability ratings and benchmarks, the course emphasises the different metrics associated with the Environmental, Social, and Governance (ESG) pillars, including the different types of ESG investing that draw on ESG metrics.

Datos del profesorado

Profesor

Nombre	Amparo Merino de Diego
Departamento / Área	Departamento de Gestión Empresarial
Despacho	Alberto Aguilera 23 [OD-408]
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DATOS ESPECÍFICOS DE LA ASIGNATURA

Contextualización de la asignatura

Aportación al perfil profesional de la titulación

This course enhances the Business Analytics degree by equipping students with a critical lens on how measurement shapes organisational strategy and societal outcomes. It expands students' analytical toolkit to encompass sustainability frameworks, ESG metrics, and regulatory disclosure systems. By providing not only frameworks but also discussing their underlying logics and envisioning diverse possibilities for sustainability measurement, the course enriches students' capacity to turn analytics into informed and responsible decision-making.



Prerrequisitos

No prerequisites are needed.

Competencias - Objetivos

Competencias

Resultados de Aprendizaje

CM5	Resultados del proceso de Formación y de Aprendizaje. CM5. Discierne, elabora y trasmite ideas y soluciones que respondan a los problemas ecosociales desde una perspectiva ética, alienadas con los Objetivos de Desarrollo Sostenible.
RA1	1. Medida de la Sostenibilidad/ Measurement Sustainability/ (6 ECTS) RA1. El estudiante es capaz de identificar y comprender los principales actores y factores, así como los marcos políticos y las instituciones que intervienen en la medición de la sostenibilidad
RA2	1. Medida de la Sostenibilidad/ Measurement Sustainability/ (6 ECTS). RA2. El estudiante es capaz de evaluar e interpretar los principales métodos de medición de la sostenibilidad y comprender las implicaciones de la heterogeneidad existente en los sistemas de medición.
RA3	1. Medida de la Sostenibilidad/ Measurement Sustainability/ (6 ECTS). RA3. El estudiante es capaz de seleccionar datos e indicadores relevantes y evaluar el impacto financiero y el riesgo climático asociado a la sostenibilidad desde una perspectiva ASG.

BLOQUES TEMÁTICOS Y CONTENIDOS

Contenidos – Bloques Temáticos

I. Foundations

Understanding and Measuring Sustainability

- Sustainability as a contested and evolving field.
- Multidimensional nature of sustainability (ethical, environmental, social, economic, institutional).
- The politics of quantification: who measures, what is measured, and for what purposes.
- Indicators as instruments of governance (governmentality) and sites of power.

II. Frameworks and tools

Reporting Systems and Analytical Instruments

- Global and regional standards: ISSB, SDG, GRI, CSRD, ESRS.
- Impact metrics and analytical tools: Carbon measurement (GHG Protocol), Scope 1–3, Life Cycle Assessment (LCA), composite indices, SDG dashboards, ESG scorecards.
- Double materiality: linking what affects the firm and what the firm affects.

III. Political Economy

Power, Justice, and Capital Flows

- Economic Roots of Ecosocial Challenges: How capitalist growth imperatives, extractivism, and postcolonial economic models shape



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the ecological and social crises that sustainability metrics aim to address.

- Economic Responses to Ecosocial Challenges: How different economic approaches have developed proposals, tools and policies to address sustainability challenges.

IV. Sustainable Finance

Finance, Risk, and the Pricing of Sustainability

- Financialization of sustainability: How financialization turns sustainability into measurable risk (transition risk, physical risk). Determine how firms assess sustainability based on potential impacts on cash flows, credit ratings, insurance risk, or asset values.
- Sustainable finance: How ESG investing, green bonds, green assets, carbon markets, and taxonomies implement sustainability within finance. Enabling low-carbon investment versus limits to bankability. Sustainability performance and greenwashing.

V. Assurance

From Disclosure to Responsibility

- Interrogating the credibility limits of sustainability reporting: how disclosure mechanisms can simultaneously serve transparency and legitimacy yet become instruments of greenwashing.
- Exploring who speaks, what is silenced, and how moral responsibility is performed through communication.
- Moving beyond compliance: toward responsibility-driven transparency and genuine accountability to affected communities and ecosystems.

VI. Futures

Beyond ESG: Reproducing or Transforming?

- Paradigm debates: post-growth, just transition, the pluriverse.
- Emerging indicators: well-being, happiness, sufficiency, regeneration.
- The future of measuring and reporting: AI, blockchain, digitalisation, and real-time data.

METODOLOGÍA DOCENTE

Aspectos metodológicos generales de la asignatura

Metodología Presencial: Actividades

AF1. Lectures. Each lecture will combine theoretical exposition with debate and/or discussion of the corresponding topic. This requires that students come to class prepared to reflect on and engage with the assigned content and readings, as indicated in the bibliographic materials for each session (as outlined in the course schedule).

AF2. Collaborative in-class activities. Designed to enable the practical application of the theoretical concepts and analytical models covered in class. They support the development of students' capacity to understand the complexity of measuring and reporting sustainability. During the sessions, the instructors will accompany and support student groups.

AF3. Individual in-class activities. Active participation in the classroom is an excellent tool for enhancing learning, not only for those who contribute directly but also for all who are present. A productive learning environment requires the active involvement of everyone in the classroom.

Metodología No presencial: Actividades



AF4. Individual Study. Students are expected to engage deeply with the course content both before and after class. This includes individual reading of texts and other materials related to the subject. Students will have access to documentation, session materials, and practical activities in Moodle.

AF5. Academic Tutoring. Tutoring is a support tool made available by the instructors to enhance the learning process. While students are encouraged to utilise this resource, doing so is entirely voluntary and will not impact their final grade in the course. The teaching team will be available during designated hours, dates, and locations to assist students with any questions or difficulties related to course content, the development of assignments, or any other matter directly or indirectly related to the course.

AF6. Research activities. Students will carry out activities to complement in-class work related to data collection, data analysis, reporting and discussions.

RESUMEN HORAS DE TRABAJO DEL ALUMNO

HORAS PRESENCIALES		
Lecciones de carácter expositivo	Ejercicios y resolución de casos y de problemas	Otras actividades, seminarios, talleres, simulaciones, dinámicas de grupo, etc
15.00	30.00	15.00
HORAS NO PRESENCIALES		
Estudio y lectura organizada	Trabajos monográficos y de investigación, individuales o colectivos	
50.00	40.00	
CRÉDITOS ECTS: 6,0 (150,00 horas)		

EVALUACIÓN Y CRITERIOS DE CALIFICACIÓN

El uso de IA para crear trabajos completos o partes relevantes, sin citar la fuente o la herramienta o sin estar permitido expresamente en la descripción del trabajo, será considerado plagio y regulado conforme al Reglamento General de la Universidad.

Actividades de evaluación	Criterios de evaluación	Peso
Individual final exam: This exam will have both a theoretical and practical format. To ensure fairness and academic integrity, the use of electronic devices and any reference materials is not permitted during the exam. Students must complete the exam using only a pen and the printed version of the exam paper.	- Demonstrates independent and critical thinking in relation to various concepts, theories, and tools - Understands and applies different theoretical approaches, models, or tools in solving practical problems - Expresses ideas in writing with accuracy, proper grammar and spelling, and in a structured, clear, and persuasive manner	50 %
	Identifies relevant challenges and issues around sustainability measurement	



Collaborative in-class activities: These assignments focus on the practical application of the course content, models, and tools covered in the course on measurement and reporting sustainability, along with critical reflection. The use of AI tools in project preparation will be permitted in accordance with guidelines established by the teaching team.	- Analyses and evaluates sustainability issues using appropriate analytical frameworks - Demonstrates abstract reasoning and independent, critical judgment - Uses diverse, relevant, and accurate information sources to support arguments - Assesses the ethical and social implications of the issues studied - Provides well-reasoned arguments for analyses, conclusions, and recommendations	40 %
Individual in-class activities. A productive learning environment requires the active involvement and participation of everyone in all the activities planned by the teaching team.	- Relevance and quality of the contribution - Clarity and coherence in communication - Active participation and willingness to engage in dialogues - Critical depth and creativity	10 %

Calificaciones

REGULAR EXAMINATION PERIOD

To pass the course during the regular examination period, students must successfully pass all the assessment activities specified in this guide. Group assignments that form part of the course methodology may be subject to peer evaluation by team members, based on a model provided by the teaching team and made available on Moodle.

RESIT EXAMINATION PERIOD

All assessment components must be passed independently in order to pass the module. Therefore, any part of the assessment not passed in the regular examination period will be recovered separately during the resit period.

STUDENTS WITH AN ATTENDANCE WAIVER

Students who have been granted an attendance waiver are required to complete only the “final exam” under the conditions established in this syllabus. Their final grade for the course will be based 100% on the final exam score. These students must contact the teaching team to confirm the exam format and any additional activities the instructor deems appropriate for their particular situation.

GENERAL RULES

General Guidelines for Participating in Course Activities. To ensure the effective development of classroom sessions, the teaching team values an active attitude of listening and participation from students, fostering meaningful engagement with the reflections and discussions around the course content. In this regard, **the use of electronic devices will be considered inappropriate unless explicitly allowed during specific moments of the class.**

Students are also reminded that **plagiarism will be penalised** in accordance with the University’s General Regulations, Article 168.2.e: “any actions aimed at falsifying or defrauding the systems for evaluating academic performance.” Plagiarism will be understood to occur in the following cases:

- When bibliographic references are not included and the sources consulted in preparing the work are not properly cited (regardless of the source, it must always be cited).
- When there is no clear distinction between original information and the student's own elaboration.



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- When words are changed from the original source without a genuine reformulation of the content.

Regarding the use of **generative artificial intelligence (AI) tools**, improper use will be considered a serious academic offence under the same regulation (Article 168.2.e). Any fraudulent or undeclared use of AI tools in unauthorised tasks—especially in final submissions or individual assessments—will be treated as a serious breach of academic integrity. Consequences may include temporary suspension of up to three months, disqualification from sitting for the next examination session, and a failing grade (0) in the affected subject, along with prohibition from retaking the course in the following session.

In the case of group work, it is expressly stated that any improper use of AI tools will result in sanctions applied to all members of the group, as per Article 168.2.e of the University's General Regulations.

In Measuring Sustainability, Level 2 of the AI Assessment Scale (Perkins, Furze, Roe & MacVaugh, 2024) will be applied, corresponding to the AI Planning category. Specifically, the use of AI tools (e.g., Elicit, ChatGPT, Scholar AI, LMNotebook) is authorised **only in selected activities**, including:

- Searching for information to develop initial questions or hypotheses.
- Supporting the understanding of complex texts.
- Designing presentations for communicating results.

AI-generated content may not be directly incorporated into the final version of any task or assessment without prior individual reformulation. The teaching staff may request partial submissions of the project and require oral defences in order to verify authorship and ensure that the group has engaged meaningfully with the learning process. In tasks where AI use is permitted, students must clearly and thoroughly document the following:

- The name of the tool used (e.g., GPT, Elicit, Scholar AI).
- The prompt or query submitted.
- The section of the work in which AI was used; How the generated content was revised or reformulated.

IMPORTANT: Direct inclusion of AI-generated text in the final assessed work is not allowed. AI may serve as a support tool, but it **cannot replace original academic work**.

BIBLIOGRAFÍA Y RECURSOS

Bibliografía Básica

Gehring, A., & Kowalski, S. (2023). Mapping Sustainability Measurement. A Review of the Approaches, Methods, and Literature. Cham: Springer Nature Switzerland.

Cavagnaro, E., & Curiel, G. H. (2022). *The three levels of sustainability*. Routledge.

Espeland, W. N., & Stevens, M. L. (2008). A sociology of quantification. *European Journal of Sociology/Archives européennes de sociologie*, 49(3), 401-436.

EU Technical Expert Group on Sustainable Finance (2020). *Taxonomy: Final report of the Technical Expert Group on Sustainable Finance*. European Commission.

Kothari, A., Demaria, F., & Acosta, A. (2014). Buen Vivir, degrowth and ecological Swaraj: Alternatives to sustainable development and the green economy. *Development*, 57(3), 362-375.

Harris, J. M., & Roach, B. (2016). *Environmental and natural resource economics: A contemporary approach*. Routledge. (Última edición de



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Longo, M., Mura, M., Vagnini, C., & Zanni, S. (2021). Sustainability measurement. Evolution and methods. In *Methods in Sustainability Science* (pp. 71-86). Elsevier. [<https://doi.org/10.1016/B978-0-12-823987-2.00010-6>].

Rasche, A. (2025). The Ethics of ESG Integration: Ethical Dilemmas of Quantification, in: Gentile, V. et al. (eds). *The Ethics of ESG: Critically Assessing the Environmental, Social and Governance Movement*. Cambridge/New York: Cambridge University Press.

Bibliografía Complementaria

Available in Moodle.