

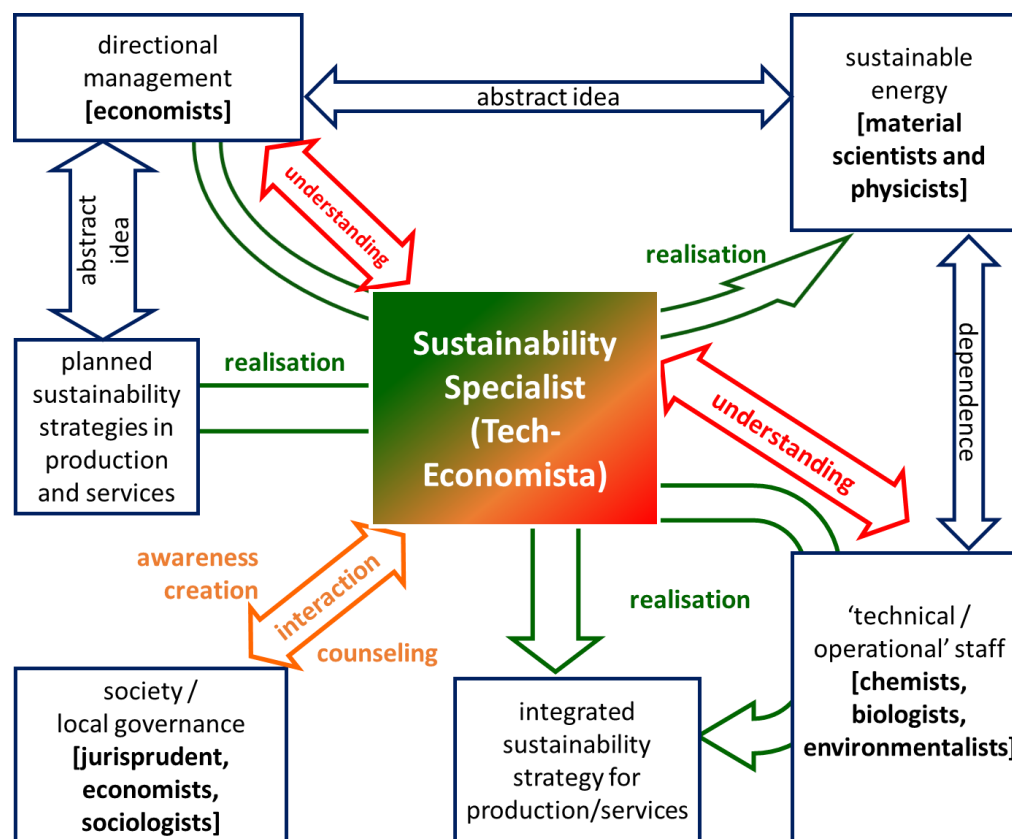
Economics and Science for Environmental Sustainability (ESES, L-33)

Luca Corazzini, DEMS - UNIMIB



The ESES idea

The **Sustainability Specialist** is a tech-economist whose holistic perspective on the interaction between economic and environmental systems supports the institutions where they work professionally in adopting new, profitable, and sustainable managerial approaches



Skills and professional profile of the ESES student

The ESES student:

- Possesses the economic and scientific skills necessary to interpret the characteristics and dynamics of economic systems and markets, with a particular focus on **environmental sustainability and the sustainable management of both natural resources and energy sources**;
- Identifies managerial and technological solutions to optimize productive processes, input productivity, logistics, and economic costs from both economic and environmental perspectives;
- Is proficient in implementing **empirical, statistical, and computational methodologies** to collect, manage, and analyze large datasets



Skills and professional profile of the ESES student

After graduation, the ESES student:

- Engages in highly qualified professional roles within productive and service firms, public administrations, consultancy companies, international institutions, research centers, and other professional entities leading the ecological transition and promoting **sustainable and circular economic models**;
- Pursues further studies in a Master's program in economics and management, such as the newly established **LM-76 «Economics and Technologies for Sustainability»** at UNIMIB



Why the new BA in “Economics and Science for Environmental Sustainability”?

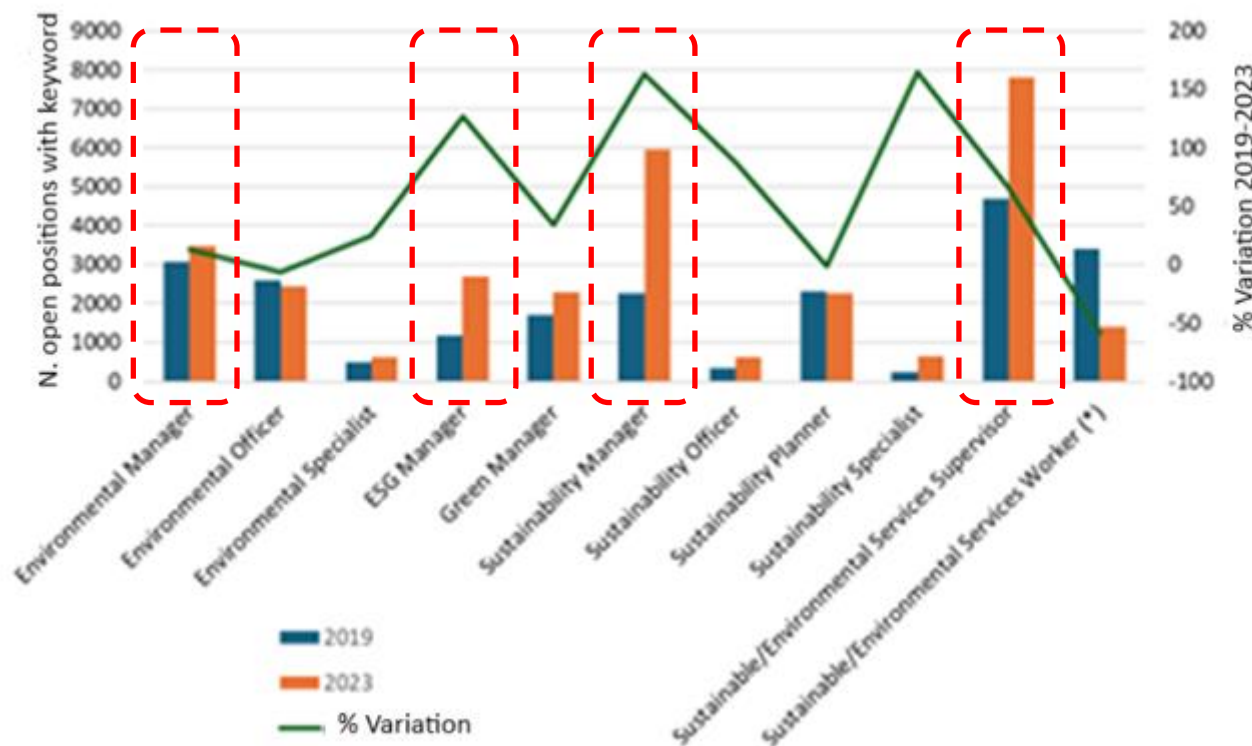
1. UNIMIB Strategic Plan 2023-2025: *“New teaching proposals will align with the strategic choices of both the Nation and the University, **following the guidelines of sustainability, transdisciplinarity, and internationalization**”*

2. **Addressing Educational Gaps:** The current academic offerings are insufficient to meet the growing demand for BA programs that focus on the interaction between economic systems and environmental sustainability



Why the new BA in “Economics and Science for Environmental Sustainability”?

3. A Highly Sought-After Professional Profile: The program responds to the increasing need for professionals skilled in both economic and environmental sustainability, aligning with emerging job market trends



Note: Results of an analysis of the job market concerning new positions in the field of environmental sustainability. (*) Number of position x10. Source: Eurostat/Cedefop, project SkillOvate (<https://www.cedefop.europa.eu/en/tools/skills-online-vacancies>).

ESES at a glance

BA classification (Italian system): L-33 ECONOMIC SCIENCES;

Teaching language: English (>B2 language certificate required);

Number of students: 150 selected through the English TOLC-E (Test CISIA - Economics);

University credits: 180 UC, with approximately 30% of activities delivered through e-tivities

Duration: 3 years

Location: University of Milan – Bicocca

Affiliated Departments: Department of Economics, Management, and Statistics (DEMS), with strong collaboration from the Department of Earth and Environmental Sciences (DISAT)

First academic year: 2025-2026

The teaching approach: key features

- **Inter- and transdisciplinary approach:** combining economics with fundamental knowledge in biology, chemistry, geology;
- **Case-based learning:** lectures delivered collaboratively and in co-presence by professors from different academic disciplines;
- **Data-Driven Analysis:** application of modern computational and statistical methods to manage and analyze large-scale economic and environmental datasets;
- **Innovative Learning Methods:**
 - ✓ Team projects and flipped classrooms to encourage interactive and critical thinking;
 - ✓ Seminars and debates with scientists and industry leaders in environmental sustainability;
 - ✓ E-tivities to foster independent learning and self-assessment
- **Industry & Academic Partnerships:**
 - ✓ Collaboration with leading firms and institutions in environmental sustainability;
 - ✓ Strong international network (including Erasmus and the European Alliance INVEST)

Minimum requirements for a BA in economics and the ESES project

In the Italian system, a BA in economics must include at least 90 UC (out of 180) in the following disciplinary areas:

- 40 UC in Economics
- 15 UC in Management
- 20 UC in Mathematics and Statistics
- 15 UC in Law

ESES fulfills the standard disciplinary requirements while integrating 30 UC in **Biology, Chemistry, and Geology**, ensuring a multidisciplinary approach:

- 45 UC in Economics
- 30 UC in Management
- 33 UC in Mathematics and Statistics
- 15 UC in Law
- 30 UC in Biology, Chemistry, and Geology

Teaching plan: first year

Field	Course	Module	UC
Management	Fundamental of Management and Marketing	Management	12
Management		Marketing	
Mathematics and Statistics	Mathematics	Mathematics	6
Mathematics and Statistics	Statistics	Statistics	9
Other sciences	Biological resources	Biological systems of resources	3
		Principles of Biology	3
Other sciences	Ecosystems and technosystems: aspects of sustainable societies	Ecosystems and technosystems: aspects of sustainable societies	6
Law	Sustainable development and public law	Sustainable development and public law	6
Economics	Microeconomics, market failures, and regulation	Microeconomics	9
		Market failures and regulation	
Computer skills		Computer skills	3
Tot.			57

Teaching plan: second year

Field	Course	Module	UC
Economics	Global supply chains and economic interdependencies	Economic interdependencies in supply chains	6
Management		Supply chain management	
Economics	Economics of the environment and climate change	Economics of the environment and climate change	6
Economics	Macroeconomics, political economy, and sustainable development	Macroeconomics	12
		Political economy and sustainable development	
Law	International environmental law	International environmental law	9
Other sciences	Earth systems and climate change mechanism	Geo-, bio, cryo-, hydro, and atmosphere	6
		Climate change mechanisms	
Other sciences	Basics for sustainable valorisation of materials	Basics for sustainable valorisation of materials	6
Mathematics and Statistics	Statistical models and applications in economics and environmental sciences	Statistical models and applications in economics and environmental sciences	9
Management	Basic financial accounting	Basic financial accounting	6
Tot.			60

Teaching plan: third year

Field	Course	Module	UC
Management	Sustainable finance and sustainability reporting	Sustainable finance	12
		Environmental and social impact measurement and	
Economics	The economy of energy and resources	Energy economics	12
		Macroeconomics and resource management	
Mathematics and Statistics	Big data for the environment	Big data for the environment	9
	Statistical methods for sustainability and biodiversity	Statistical methods for sustainability and biodiversity	
Other sciences	Technologies and monitoring for sustainable processing, resource management and energy	Physical basis of sustainable technologies	9
		Chemical concepts for sustainable processing	
		Economic perspectives in resource & energy management	
	Geological factors in modern markets	Critical raw materials and sustainable mining options	
		Market analysis of geological factors	
UC at student's choice		UC at student's choice	12
Additional skills for accessing to the labor markets			3
Additional language skills			3
Final thesis			3
Tot.			63

Coordinating faculty

The Department of Economics, Management, and Statistics (DEMS) joins forces with the Department of Earth and Environmental Sciences (DISAT) to deliver a truly interdisciplinary program. Both departments have been recognized as **“Departments of Excellence 2023–2027”**, reinforcing their commitment to high-quality research and innovative education

Surname	Name	Field	Qualification
Corazzini	Luca	ECON-01/A	Full Professor
Lange	Heiko	CHEM-03/A	Associate Professor
Santoro	Alessandro	ECON-03/A	Full Professor
Camerlenghi	Federico	STAT-01/A	Associate Professor
Athanasoglou	Stergios	ECON-01/A	Associate Professor
Guerzoni	Marco	ECON-04/A	Associate Professor
D'Agostino	Lorena Maria	ECON-07/A	Senior Assistant Professor
Di Pietro	Francesca	ECON-07/A	Senior Assistant Professor
Villa	Sara	BIOS-05/A	Associate Professor
Palm	Emily Rose	BIOS-02/A	Senior Assistant Professor

Professional actors involved in the ESES project

The following professionals, representing their respective institutions, participated in the ESES coordinating meetings held on June 24, 26, and July 1, 2024:

- Dr. Monica Riva, Sustainability Product Line Manager, *Bureau Veritas Italy*;
- Dr. Marco Antonio Cataldi, Circular Economy Manager, *Bureau Veritas Italy*;
- Dr. Deborah Serino, HR Business Partner GEM, Research & Development, *Sorgenia*;
- Dr. Lisa Sorbi, Compliance & Privacy Manager, *Sorgenia*;
- Dr. Salvatore Balsama, Professional Industrial Chemist, Secretary of the *Lombardy Chemistry Association*;
- Dr. Luca Raffaele, General Director, *NeXt - Nuova Economia per Tutti*;
- Dr. Marta Camilla Valota, Director, *ISCOS Lombardy*;
- Dr. Veronica Cremonesi, Education & Professional training, *Federchimica*;
- Dr. Monica Garbarino, Regulatory & Public Affairs Manager, *Agrofarma*

This diverse group of experts ensures that ESES is aligned with industry needs, fostering a strong connection between academia and professional practice

Grazie!

Looking forward to seeing you in Milan!

ESES (L-33): Luca Corazzini (luca.corazzini@unimib.it)