

FOCUS UNIVERSITY INSTITUTE

Madrid, Spain

ECOLOGICAL ECONOMICS FOR BUSINESS

Program Developer: Luis Fernando (Lou) Villalba, PhD., EdD.

Course Code:	MBA-BS 607 (Provisional)
Credits:	3 North American Graduate Credits / Proposed 6 ECTS
Academic Level:	Graduate (Master's / MBA)
Duration:	14 Weeks
Student Workload:	Approximately 150 Hours (42 Guided + 108 Independent)
Delivery Mode:	Madrid-Based, Online, or Blended
Program/Stage:	Master of Business Administration — Concentration: Business and Sustainability / Concentration Course 7
Professor:	
Office Hours:	[To be determined]
Contact:	[To be determined]

1. Course Description

This advanced concentration course forms part of the Master of Business Administration — Concentration: Business and Sustainability. It examines business and economic activity as embedded within finite, dynamic, and interdependent social-ecological systems. Students compare ecological economics with mainstream, environmental, and natural-resource economics and critically evaluate assumptions about growth, value, substitutability, efficiency, scale, distribution, allocation, and human well-being.

Students apply systems thinking, biophysical and material-flow reasoning, externality and cost-shifting analysis, ecosystem-service and natural-capital concepts, plural valuation, scenario analysis, and decision methods to organizational and value-chain challenges. Particular attention is given to thermodynamics, energy and resource throughput, planetary boundaries, biodiversity, uncertainty, irreversibility, resilience, equity, and just transition.

The course connects ecological-economic evidence to strategy, finance, operations, innovation, business models, policy, governance, and implementation. It establishes the analytical foundations for later study of sustainability reporting without duplicating detailed reporting standards or assurance. The Week 14 signature assessment is a Regenerative Business Transition Plan with an executive presentation and individual oral defence.

Prerequisites: Successful completion of the six-course MBA common trunk or approved equivalent.

2. Course Learning Outcomes

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

- LO1. **Critically evaluate** the assumptions, purposes, methods, strengths, and limitations of ecological economics in comparison with mainstream, environmental, and natural-resource economics for business decision-making. [Bloom's Level 5: Evaluate]
- LO2. **Analyze** organizations and value chains as social-ecological systems using boundaries, stocks, flows, material and energy throughput, feedback, externalities, dependencies, uncertainty, and distributional evidence. [Bloom's Level 4: Analyze]
- LO3. **Apply** ecological-economic valuation, accounting, scenario, and multi-criteria methods to compare business options while recognizing plural values, critical

thresholds, irreversibility, data limitations, and ethical consequences. [Bloom's Level 4: Analyze]

LO4. **Evaluate** economic and policy approaches to resource use, climate, biodiversity, circularity, sufficiency, resilience, and just transition and determine their strategic implications across organizational and international contexts. [Bloom's Level 5: Evaluate]

LO5. **Develop** and defend an evidence-based regenerative business transition plan that aligns organizational value creation with ecological limits, social well-being, accountable governance, implementation, measurement, and adaptive learning. [Bloom's Level 6: Create]

3. Required Materials

3.1 Main Texts and Open Educational Resource (OER)

- Main Text 1: Costanza, R., Cumberland, J. H., Daly, H., Goodland, R., & Norgaard, R. B. (2014). An introduction to ecological economics (2nd ed.). CRC Press.
- Main Text 2 (OER): Dasgupta, P. (2021). The economics of biodiversity: The Dasgupta Review. HM Treasury. <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>

3.2 Supplementary Texts (Non-Open Educational Resources)

- Daly, H. E., & Farley, J. (2011). Ecological economics: Principles and applications (2nd ed.). Island Press.
- United Nations Environment Programme, International Resource Panel. (2024). Global Resources Outlook 2024; Fanning and Raworth's 2025 open-access global Doughnut analysis.
- IPBES. (2026). Methodological assessment of the impact and dependency of business on biodiversity and nature's contributions to people; United Nations SEEA Ecosystem Accounting.
- Selected current peer-reviewed, governmental, intergovernmental, organizational, community, and sector evidence supplied through the LMS.

3.3 Open Educational Resources (OER)

- The Economics of Biodiversity: The Dasgupta Review: <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>
- UN System of Environmental-Economic Accounting—Ecosystem Accounting: <https://seea.un.org/ecosystem-accounting>
- IPBES Business and Biodiversity Assessment: <https://doi.org/10.5281/zenodo.17185116>
- UNEP Global Resources Outlook 2024: <https://www.unep.org/resources/Global-Resource-Outlook-2024>
- Stockholm Resilience Centre planetary-boundaries resources: <https://www.stockholmresilience.org/research/planetary-boundaries.html>
- Fanning and Raworth's open-access 2025 global Doughnut analysis: <https://doi.org/10.1038/s41586-025-09385-1>

- CORE Econ open educational resources: <https://www.core-econ.org/>
- Selected UN, IPBES, UNEP, SEEA, OECD, EU, national statistical-office, academic, community, and organizational ecological-economic resources.

3.4 Technology Requirements

- Reliable internet connection and Learning Management System access
- Spreadsheet, collaborative-document, presentation, systems-mapping, material-flow, scenario, multi-criteria, and data-visualization software
- Instructor-approved artificial-intelligence, lifecycle, natural-capital, ecosystem-service, geospatial, footprint, and analytical tools; students will not be required to purchase multiple commercial subscriptions
- PDF annotation and video-conferencing capability for source review, analytical laboratories, case discussions, executive briefings, and the final oral defence

4. Assessment Structure

This course combines ongoing Ecological Economics Decision Labs with an individual Organizational Metabolism and Externality Diagnostic, an independently completed midterm examination, a Policy, Valuation, and Transition Decision Exercise, and an applied final plan. The Regenerative Business Transition Plan replaces a conventional final examination and culminates in Week 14.

Assessment Component	Type	Weight	Due Date
Ecological Economics Decision Labs	Ongoing	10%	Continuous
Organizational Metabolism & Externality Diagnostic	Formative	15%	Week 4
Midterm Examination	Summative	20%	Week 7
Policy, Valuation & Transition Decision Exercise	Summative	15%	Week 10
Final Project: Regenerative Business Transition Plan	Summative	40%	Week 14
TOTAL		100%	

5. Grading Scale

This course uses the American University grading scale:

Letter Grade	Percentage	Description
A	93-100%	Excellent; exceptional achievement
A-	90-92%	Excellent work with minor areas for improvement
B+	87-89%	Very good; above average performance
B	83-86%	Good; solid understanding demonstrated
B-	80-82%	Good work with some areas for improvement
C+	77-79%	Satisfactory; meets basic requirements
C	73-76%	Adequate; acceptable understanding
C-	70-72%	Passing but below average
D	60-69%	Minimum passing; significant improvement needed
F	Below 60%	Failing; does not meet course requirements

6. Course Schedule

Week 1: Ecological Economics, Business, and the Purpose of the Economy

Topics: Ecological, environmental, natural-resource, and mainstream economics; economy as subsystem; scale, distribution, and allocation; positive and normative claims; growth, development, well-being, and business purpose

Readings: Costanza et al., introductory chapters; Dasgupta Review, headline messages and introduction

Synchronous: Competing economic paradigms, assumptions, system boundaries, and business-purpose laboratory

Asynchronous: Select an approved organization, product, service, sector, or value chain and define its social-ecological decision context

Week 2: Social-Ecological Systems, Planetary Boundaries, and Safe-and-Just Space

Topics: Coupled human-natural systems; stocks, flows, feedback, delay, nonlinearity, thresholds, tipping, resilience; planetary boundaries; social foundations; system mapping; organizational embeddedness

Readings: Stockholm Resilience Centre resources; Fanning and Raworth (2025); selected systems-thinking material

Synchronous: Social-ecological system, causal-loop, boundary, dependency, and leverage-point laboratory

Asynchronous: Map the selected organization's principal ecological and social relationships, feedbacks, and boundary choices

Week 3: Thermodynamics, Throughput, Materials, Energy, and Organizational Metabolism

Topics: First and second laws; entropy; low-entropy inputs; material and energy throughput; stocks and flows; resource productivity; footprints; lifecycle and value-chain boundaries; absolute and relative decoupling

Readings: Costanza et al., biophysical foundations; UNEP Global Resources Outlook 2024

Synchronous: Material-energy flow, organizational metabolism, unit, boundary, and decoupling laboratory

Asynchronous: Construct a preliminary material, energy, water, land, emissions, waste, and dependency profile

Week 4: Externalities, Cost Shifting, Market Failure, and Organizational Diagnosis

Topics: Positive and negative externalities; cost shifting; public goods; common-pool resources; property and access; information asymmetry; power; social costs; impact pathways; evidence gaps

Readings: Costanza et al., externalities and institutions; selected organization and sector evidence

Synchronous: externality pathway, cost-shifting, stakeholder, root-cause, and alternative-explanation laboratory

Asynchronous: Complete Organizational Metabolism and externality Diagnostic

Assessment Due: Organizational Metabolism & externality Diagnostic (15%)

Week 5: Natural Capital, Ecosystem Services, Strong and Weak Sustainability

Topics: Natural, produced, human, social, and financial capital; critical natural capital; substitutability and complementarity; ecosystem condition and services; dependencies and impacts; precaution, safe minimum standards, and irreversibility

Readings: Dasgupta Review, selected chapters; UN SEEA Ecosystem Accounting; IPBES (2026), selected material

Synchronous: Capital-substitutability, ecosystem-condition, dependency-impact, threshold, and precaution case

Asynchronous: Identify critical natural-capital dependencies, non-substitutable functions, thresholds, and decision safeguards

Week 6: Value, Valuation, Cost-Benefit Analysis, and Multi-Criteria Decisions

Topics: Instrumental, intrinsic, and relational values; monetary and non-monetary valuation; discounting; distributional weights; cost-benefit analysis; ecosystem-service valuation; multi-criteria decision analysis; deliberation; uncertainty and sensitivity

Readings: Dasgupta Review, valuation material; IPBES plural-values resources; selected methods guidance

Synchronous: Valuation-method selection, discounting, sensitivity, distribution, and multi-criteria decision laboratory

Asynchronous: Prepare for the midterm through an integrated ecological-economic business case

Week 7: Midterm Examination and Ecological-Economic Integration

Topics: Integration of paradigms, scale, distribution, allocation, systems, boundaries, feedback, throughput, externalities, cost shifting, natural capital, strong sustainability, valuation, uncertainty, and decision methods

Readings: Review Weeks 1-6 materials

Synchronous: Individual midterm examination; generative AI is not permitted unless expressly authorized

Asynchronous: Post-examination correction and professional-learning plan

Assessment Due: Midterm Examination (20%)

Week 8: Accounting Beyond GDP and Organizational Performance

Topics: GDP and financial-accounting limits; inclusive wealth; genuine progress; material-flow accounts; environmental-economic and ecosystem accounting; stocks, condition, flows, depletion, degradation, and organizational decision use

Readings: UN SEEA Ecosystem Accounting; Dasgupta Review, accounting and wealth chapters

Synchronous: Beyond-GDP, material-flow, ecosystem-account, baseline, indicator, and decision-use laboratory

Asynchronous: Develop an ecological-economic indicator set; detailed disclosure standards remain reserved for the reporting course

Week 9: Energy Economics, Carbon Budgets, Rebound, and Transition

Topics: Energy quality and return; energy services; carbon budgets; emissions pathways; efficiency, rebound, and Jevons effects; absolute reduction; stranded assets; transition risk; adaptation and resilience

Readings: Costanza et al., energy material; current IPCC and energy-system evidence selected by the instructor

Synchronous: Energy-flow, carbon-budget, efficiency-rebound, transition-pathway, and scenario laboratory

Asynchronous: Develop transition scenarios and test rebound, burden shifting, feasibility, uncertainty, and distributional effects

Week 10: Institutions, Policy Instruments, Commons, and Just Transition

Topics: Taxes, fees, caps, permits, standards, subsidy reform, procurement, public investment, information, liability, common-pool governance, collective action, policy mixes, regulatory interaction, competitiveness, leakage, equity, and just transition

Readings: Selected ecological-economic policy material; UNEP Global Resources Outlook 2024; current jurisdictional evidence

Synchronous: Policy-mix, commons-governance, valuation, scenario, incidence, and business-response exercise

Asynchronous: Submit Policy, Valuation, and Transition Decision Exercise

Assessment Due: Policy, Valuation & Transition Decision Exercise (15%)

Week 11: Circular, Regenerative, Sufficient, and Post-Growth Business Models

Topics: Circularity and its limits; regenerative design; sufficiency; durability, repair, reuse, sharing, product-service systems, stewardship, social enterprise; post-growth and steady-state debates; revenue, cost, finance, demand, labour, and rebound implications

Readings: UNEP Global Resources Outlook 2024; selected circular, regenerative, sufficiency, and business-model research

Synchronous: Business-model redesign, value-retention, sufficiency, rebound, stakeholder-value, and viability laboratory

Asynchronous: Compare transition options for ecological integrity, social value, financial viability, and implementation feasibility

Week 12: Biodiversity, Plural Values, Equity, and Business Transformation

Topics: Business dependencies and impacts on biodiversity; nature's contributions to people; rights, power, participation, Indigenous and local knowledge; intergenerational and international equity; benefit and burden distribution; procedural, recognition, and restorative justice

Readings: IPBES Business and Biodiversity Assessment (2026); selected plural-values and just-transition evidence

Synchronous: Dependency-impact, rights-holder, plural-value, distribution, safeguard, and transformation case review

Asynchronous: Complete the transition plan's options, safeguards, governance, roadmap, measures, and reflection

Project Milestone Due: Approved system boundary, ecological-economic diagnosis, evidence plan, transition options, and success criteria

Week 13: Regenerative Business Transition Studio

Topics: Strategic synthesis; target state; option portfolio; system leverage; governance; ownership; capabilities; resources; finance; policy interaction; risk; justice; indicators; adaptation; limits; oral-defence preparation

Readings: Review current authoritative evidence relevant to the selected organization, ecosystems, communities, sector, and jurisdictions

Synchronous: Transition-plan studio, peer challenge, instructor consultation, and executive-briefing rehearsal

Asynchronous: Complete final plan, analytical exhibits, presentation, AI Usage Statement, and critical reflection

Week 14: Transition Presentations, Oral Defence, and Integration

Topics: Integration of ecological-economic theory, systems, biophysical evidence, valuation, policy, business models, strategy, finance, justice, governance, implementation, measurement, and professional judgment

Readings: No new readings; review project evidence, course outcomes, and specialization connections

Synchronous: Regenerative Business Transition Plan presentations, individual oral defence, peer learning, and course synthesis

Asynchronous: Submit final plan, evidence portfolio, presentation, AI Usage Statement, and individual reflection

Assessment Due: Final Project: Regenerative Business Transition Plan (40%)

7. Detailed Assignment Descriptions

7.1 Ecological Economics Decision Labs - 10%

Learning Outcomes Addressed: CLO1, CLO2, CLO3, CLO4, CLO5

Description

Graduate ecological-economic capability develops through disciplined preparation, quantitative and qualitative analysis, systems mapping, evidence review, model testing, dialogue, professional challenge, collaboration, and reflection. Students complete applied laboratories and explain how boundaries, values, uncertainty, distribution, power, and implementation shape business decisions.

Requirements

- Attend a minimum of 12 of 14 synchronous sessions and participate actively
- Complete paradigm, social-ecological system, material-energy flow, externality, natural-capital, valuation, accounting, energy, policy, business-model, biodiversity, and transition laboratories
- Use traceable evidence, explicit units and boundaries, reproducible analysis, assumptions, sensitivity, limitations, plural values, and accountability in professional communication
- Provide respectful, specific, evidence-based, and useful challenge during cases, scenarios, peer review, and executive briefings
- Follow confidentiality, privacy, lawful access, community and rights-holder respect, accessibility, academic-integrity, and AI-use disclosure requirements

Participation Rubric

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Preparation & Engagement (20%)	Consistently prepared; contributions materially advance ecological-economic learning	Regular preparation and useful contribution	Basic preparation and participation	Unprepared, absent, or minimal contribution
Applied Analytical Labs (35%)	Accurate, reproducible work demonstrates excellent systems, biophysical, valuation, and decision judgment	Strong applied work with minor gaps	Basic work with limited integration	Incomplete, inaccurate, or formulaic work
Professional Contribution (20%)	Evidence-based questions, explanations, and challenge materially improve shared decisions	Constructive and relevant contribution	Basic contribution with limited detail	Little or unprofessional contribution
Responsible Evidence & Conduct (25%)	Exemplary boundaries, provenance, plural values, rights-holder respect, ethics, attribution, and AI transparency	Responsible conduct with minor lapses	Meets minimum requirements	Repeated, unsupported, disrespectful, or opaque practice

7.2 Organizational Metabolism & Externality Diagnostic (Formative Assessment 1) - 15%

Learning Outcomes Addressed: CLO1, CLO2, CLO3

Due Date: Week 4

Description

Students diagnose an approved organization, product, service, sector, or bounded value chain as a social-ecological system. The decision brief connects organizational purpose and value creation to material and energy throughput, ecosystem dependencies, externalities, cost shifting, stakeholder effects, uncertainty, and managerial choices.

Requirements

1. Define the focal system, organizational purpose, decision, boundaries, scale, stakeholders and rights-holders, time horizon, units, and limitations
2. Create a social-ecological system map and a traceable material-energy-water-land-emissions-waste profile using available evidence
3. Identify major ecosystem dependencies, positive and negative externalities, cost-shifting pathways, feedbacks, thresholds, and distributional effects
4. Evaluate data quality, causal claims, alternative explanations, assumptions, uncertainty, missing values, and risks of burden shifting
5. Recommend a bounded diagnostic priority, improved evidence plan, immediate safeguards, and complete AI Usage Statement

Total Length: 1,800-2,200 words plus system map, flow profile, externality pathways, analytical exhibits, and source record

Format: APA 7 analytical brief and auditable exhibits; submit via LMS as PDF, model/data file, and editable source files

Organizational Metabolism & Externality Diagnostic Rubric

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Purpose, Scope & System Boundary (15%)	Precise decision, purpose, nested system, scale, stakeholders, rights-holders, horizon, units, and limitations	Clear scope with minor gaps	Adequate scope and context	Purpose or boundaries unclear
Material-Energy & Dependency Profile (25%)	Traceable flows and evidence connect materials, energy, water, land, emissions, waste, ecosystems, dependencies, trends, and data provenance	Strong profile with minor gaps	Basic profile and measures	Profile or data unreliable
Externalities, Cost Shifting & Distribution (25%)	Impact pathways, feedbacks, social costs, beneficiaries, burden bearers, power, thresholds, and alternatives are critically analyzed	Strong analysis with minor gaps	Basic analysis with limited depth	Material effects or groups omitted
Diagnosis, Uncertainty & Evidence Plan (25%)	Root causes, causal limits, values, assumptions, uncertainty, sensitivity, safeguards, and evidence priorities are compelling	Sound diagnosis with minor gaps	Basic diagnosis and response	Premature or unsupported diagnosis
Communication, Evidence & AI Transparency (10%)	Decision-ready, reproducible, fully cited, calibrated, accessible, and transparently documented	Professional synthesis with minor issues	Adequate but uneven	Unclear, poorly sourced, or opaque

7.3 Midterm Examination (Summative Assessment 1) - 20%

Learning Outcomes Addressed: CLO1, CLO2, CLO3, CLO4

Due Date: Week 7

Description

The individual midterm examination assesses independent mastery of ecological-economic paradigms, scale, distribution, allocation, social-ecological systems, boundaries, throughput, externalities, cost shifting, natural capital, strong and weak sustainability, valuation, uncertainty, and decision methods.

Requirements

1. Distinguish ecological, environmental, natural-resource, and mainstream economic assumptions and their business implications
2. Analyze stocks, flows, feedback, throughput, externalities, dependencies, thresholds, and distribution using transparent evidence
3. Evaluate natural-capital substitutability, ecosystem services, plural values, valuation methods, discounting, and multi-criteria approaches
4. Interpret data quality, boundaries, units, baselines, causal claims, uncertainty, sensitivity, trade-offs, and alternative explanations
5. Recommend and defend a proportionate business decision with safeguards, implementation logic, indicators, and acknowledged limitations

Format: 120-minute examination with applied short answers, evidence interpretation, analytical work, and integrated decision cases

Conditions: Individual work; approved reference sheet and calculator permitted; generative AI not permitted

Midterm Examination Rubric

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Paradigms, Purpose & Core Concepts (20%)	Ecological-economic concepts and assumptions are accurately compared, integrated, and applied to business decisions	Strong integration with minor gaps	Basic understanding with some errors	Major concepts missing or inaccurate
Systems & Biophysical Analysis (25%)	Boundaries, stocks, flows, feedback, throughput, externalities, dependencies, scale, and distribution are handled rigorously	Strong analysis with minor gaps	Basic analysis with limited depth	Material concepts or evidence misapplied

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Natural Capital, Value & Decision Methods (25%)	Strong sustainability, thresholds, plural values, valuation, discounting, uncertainty, and multi-criteria methods are critically evaluated	Sound judgment with minor gaps	Basic treatment with some errors	Methods seriously misapplied
Evidence, Ethics & Responsible Reasoning (15%)	Data, assumptions, values, uncertainty, trade-offs, affected groups, safeguards, and limitations are critically handled	Sound reasoning with minor gaps	Basic treatment with limited integration	Claims overstated or responsibilities omitted
Recommendation & Communication (15%)	Coherent, proportionate response is concise and convincingly defended	Clear response with minor issues	Understandable but uneven	Recommendation unclear or unsupported

7.4 Policy, Valuation & Transition Decision Exercise (Summative Assessment 2) - 15%

Learning Outcomes Addressed: CLO2, CLO3, CLO4

Due Date: Week 10

Description

Students prepare and defend an ecological-economic decision memorandum for an approved policy, investment, sourcing, production, market, land, water, energy, biodiversity, or transition scenario. The exercise integrates valuation, uncertainty, policy design, distribution, organizational response, and implementation.

Assignment Focus

The submission must distinguish verified evidence, values, assumptions, estimates, scenarios, and managerial judgments. Methods must fit the decision, units and baselines must be explicit, sensitivity must be tested, and AI-supported analysis must be independently verified and disclosed.

Requirements

1. Decision context, system boundary, affected ecosystems and people, rights-holders, time horizon, baseline, and success criteria
2. Comparison of monetary, biophysical, plural-value, scenario, and multi-criteria methods with transparent selection and limitations
3. Policy or institutional options evaluated for effectiveness, feasibility, incidence, competitiveness, leakage, rebound, equity, and residual risk
4. Transition scenarios tested for thresholds, irreversibility, uncertainty, sensitivity, burden shifting, and unintended consequences
5. Recommendation with organizational actions, safeguards, ownership, decision thresholds, indicators, review, and adaptation

6. Source, data, value, assumption, calculation, scenario, limitation, safe-disclosure, and complete AI Usage Statement records

Total Length: 1,800-2,200-word decision memorandum plus valuation, scenario, distribution, and policy exhibits

Format: Professional memorandum, auditable model and visuals, and 5-7 minute individual decision review; submit via LMS

Policy, Valuation & Transition Decision Exercise Rubric

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Decision Context, Boundary & Baseline (10%)	Purpose, ecosystems, people, rights-holders, scale, horizon, baseline, values, constraints, and criteria are precise	Strong foundation with minor gaps	Basic foundation and context	Scope or baseline unreliable
Method Selection & Valuation (20%)	Monetary, biophysical, plural-value, scenario, and multi-criteria methods are critically selected, applied, and bounded	Strong methods with minor gaps	Basic methods with some errors	Methods unsuitable or inaccurate
Policy, Institutional & Business Analysis (25%)	Instruments, governance, organizational response, effectiveness, feasibility, incidence, competitiveness, leakage, and interaction are rigorously evaluated	Strong analysis with minor gaps	Basic analysis with limited integration	Material implications omitted
Scenarios, Uncertainty & Distribution (20%)	Thresholds, irreversibility, uncertainty, sensitivity, rebound, burden shifting, equity, and residual effects are transparently tested	Sound comparison with minor gaps	Basic comparison and response	Scenarios unsupported or distribution ignored
Recommendation, Governance & Adaptation (15%)	Ownership, safeguards, thresholds, actions, indicators, review, and adaptation are practical and accountable	Practical governance with minor gaps	Basic governance and monitoring	Responsibilities or decisions unclear
Evidence, Model Quality & AI Transparency (10%)	Models are reproducible, verified, calibrated, cited, safely disclosed, and transparently documented	Professional with minor issues	Adequate but uneven	Inaccurate, unsafe, poorly sourced, or opaque

8. Final Project: Regenerative Business Transition Plan (Summative Assessment 3) - 40%

Learning Outcomes Addressed: All course learning outcomes (CLO1-CLO5)

8.1 Project Overview

The final project is the signature assessment of Ecological Economics for Business. Students diagnose an organizational or value-chain challenge and develop an implementation-ready transition plan grounded in ecological-economic theory, biophysical evidence, plural values, strategic and financial judgment, stakeholder and rights-holder responsibilities, and independent graduate analysis.

8.2 Project Scope

Each student selects an approved organization, business unit, product-service system, investment, sector, place-based initiative, or bounded value chain for which lawful, non-confidential, and sufficiently reliable evidence is available. The project must address a consequential ecological-economic decision and avoid unsupported claims of engineering, legal, audit, certification, or scientific authority.

8.3 Deliverables

Regenerative Business Transition Plan (3,500-4,500 words, excluding appendices)

1. Executive Decision Brief: Challenge, system context, evidence, objectives, alternatives, recommendation, expected value, material risks, decisions requested, and limitations
2. Ecological-Economic Diagnosis: Paradigm and purpose, system boundary, scale, throughput, dependencies, impacts, externalities, cost shifting, stakeholders, rights-holders, and root causes
3. Biophysical and Natural-Capital Profile: Material, energy, water, land, climate, biodiversity, ecosystem condition and services, thresholds, trends, baselines, uncertainty, and evidence gaps
4. Value and Distribution Analysis: Financial, biophysical, social, intrinsic, and relational values; beneficiaries; burden bearers; equity; power; participation; irreversibility; and intergenerational effects
5. Options and Scenario Analysis: Business-as-usual and transition options; methods; assumptions; policy interaction; viability; sensitivity; rebound; leakage; trade-offs; safeguards; and residual effects
6. Regenerative Transition Design: Target state, business-model and operational changes, innovation, resource and energy strategy, ecosystem and community relationships, and prevention of burden shifting
7. Governance, Implementation, and Learning: Roadmap, owners, resources, finance, capabilities, participation, indicators, thresholds, review, adaptation, accountability, and connections to later reporting study

8. Evidence and AI Record: Dated authoritative sources, reproducible analysis, data provenance, values, assumptions, scenarios, uncertainty, limitations, independent judgment, reflection, and full disclosure

Executive Transition Presentation and Individual Oral Defence (12-15 minutes plus 5-10 minutes for questions)

- Present during the Week 14 synchronous session
- 10-12 slides or equivalent executive-ready visual narrative supported by system, throughput, dependency-impact, valuation, scenario, distribution, roadmap, and indicator evidence
- Respond to questions about boundaries, evidence, methods, assumptions, values, ecological constraints, stakeholders, policy, financial viability, justice, implementation, trade-offs, and limitations
- Professional, accessible, and interculturally responsive communication with transparent attribution and independent graduate mastery expected

8.4 Project Timeline & Milestones

Week	Milestone	Deliverable	Weight
Week 9	Scope & Ecological-Economic Diagnosis	Decision, boundary, evidence, throughput, dependencies, impacts, stakeholders, rights-holders, and approval	Formative feedback
Week 12	Integrated Transition Design	Options, scenarios, values, policy, business model, safeguards, roadmap, governance, and indicators	Peer/instructor review
Week 13	Complete Plan & Challenge	Executive brief, transition plan, evidence portfolio, presentation, reflection, and AI record	Instructor feedback
Week 14	Final Presentation & Defence	Final plan, evidence portfolio, executive presentation, and individual defence	40% of final grade

8.5 Final Project Grading Rubric

Regenerative Business Transition Plan (70% of Final Project Grade)

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Scope, Evidence & Ecological-Economic Diagnosis (15%)	Decision-ready scope and triangulated evidence connect purpose, systems, scale, throughput, dependencies, impacts, stakeholders, values, and root causes	Strong foundation with minor gaps	Basic foundation with limited integration	Scope or diagnosis unreliable

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Biophysical & Natural-Capital Analysis (15%)	Materials, energy, water, land, climate, biodiversity, ecosystem condition, thresholds, trends, and uncertainty are critically analyzed	Strong analysis with minor gaps	Basic analysis with limited depth	Material constraints or dependencies omitted
Value, Distribution & Justice (15%)	Financial, biophysical, social, intrinsic, and relational values; power; participation; benefits; burdens; rights; and generations are rigorously evaluated	Strong treatment with minor gaps	Basic treatment with limited depth	Material values or affected groups omitted
Options, Scenarios & Strategic Viability (15%)	Alternatives integrate policy, finance, business models, sensitivity, rebound, leakage, trade-offs, safeguards, feasibility, and residual effects	Strong analysis with minor gaps	Basic analysis with limited depth	Options unsupported or impractical
Regenerative Transition Design (15%)	Target state, operations, innovation, resource and energy strategy, ecosystem and community relationships, and burden-shifting prevention are coherent	Strong design with minor gaps	Basic design with limited depth	Transition design unsupported
Governance, Roadmap, Measures & Adaptation (15%)	Actions, ownership, resources, capabilities, participation, indicators, thresholds, review, accountability, and adaptation are actionable	Practical roadmap with minor gaps	Basic roadmap and measures	Roadmap vague or impractical
Evidence, Limitations, AI Transparency & Professional Quality (10%)	Executive-ready, reproducible, fully cited, current, calibrated, accessible, safe, and transparently disclosed	Professional with minor issues	Adequate but uneven	Unsafe, unreliable, or opaque

Executive Presentation and Individual Oral Defence (30% of Final Project Grade)

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Transition Narrative (30%)	Compelling narrative connects purpose, system diagnosis, ecological constraints, values, options, transition design, implementation, and decisions	Clear narrative with sound prioritization	Adequate narrative with gaps	Unclear or unsupported narrative
Analytical & Transition Visuals (25%)	Accurate, accessible visuals make systems, flows, dependencies, impacts, values, scenarios, distribution, roadmap, and trade-offs immediately understandable	Professional visuals support the decision	Basic visuals with limited analytical value	Visuals inaccurate or absent

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Executive & Intercultural Presence (20%)	Confident, concise, accessible, and responsive to diverse organizational, community, rights-holder, and international perspectives	Professional delivery and engagement	Adequate delivery with limited adaptation	Unprofessional or ineffective delivery
Oral Defence (25%)	Responses demonstrate independent mastery of evidence, boundaries, methods, values, ecological constraints, policy, business implications, justice, implementation, and limits	Sound responses demonstrate strong understanding	Basic responses with some uncertainty	Unable to explain evidence or defend judgment

9. Course Learning Outcomes and Assessment Alignment

CLO / Assessment	Decision Labs	Diagnostic	Midterm	Decision Exercise	Final Plan
CLO1	✓✓	✓	✓✓	✓	✓✓
CLO2	✓✓	✓✓	✓✓	✓✓	✓✓
CLO3	✓✓	✓✓	✓✓	✓✓	✓✓
CLO4	✓	✓	✓✓	✓✓	✓✓
CLO5	✓	✓	✓	✓	✓✓

Key: ✓ = Addressed | ✓✓ = Primary Direct Evidence

10. Course Policies

10.1 Attendance & Participation

Regular attendance and active participation in synchronous sessions are essential for success in this course. Students are expected to attend all scheduled synchronous sessions with cameras enabled. If you must miss a session, please notify the instructor in advance. More than two unexcused absences may result in a reduced participation grade.

10.2 Late Submission Policy

- Assignments submitted within 24 hours of deadline: 10% penalty
- Assignments submitted 24-48 hours late: 20% penalty
- Assignments submitted more than 48 hours late: not accepted without prior approval
- Extensions may be granted for documented emergencies with advance notice

10.3 Academic Integrity

All work submitted must be your own original work. Plagiarism, including the use of AI-generated content without proper disclosure, is a serious academic offense. All sources must be properly cited. Violations of academic integrity will result in a zero for the assignment and may lead to further disciplinary action.

10.4 AI Usage Policy

Artificial intelligence may support selected discovery, systems mapping, material-flow, scenario, valuation, policy, natural-capital, business-model, measurement, and communication activities in this course, but students remain accountable for every source, data element, boundary, unit, value judgment, formula, assumption, scenario, impact, and recommendation.

1. **Assessment Conditions:** The Week 7 midterm examination is completed without generative AI unless the instructor expressly authorizes a specific tool or accommodation.
2. **Transparency and Provenance:** Every AI-assisted submission must include an AI Usage Statement identifying tools, purposes, material prompts, outputs used, information supplied, verification steps, limitations, and substantive human revisions.
3. **Verification, Current Authority, and Professional Limits:** AI output is not evidence. Ecological conditions, resource flows, prices, technologies, laws, policies, and organizational constraints change. Students must use dated authoritative and contextualized evidence; distinguish measured data, assumptions, estimates, scenarios, targets, and values; verify units, system boundaries, and calculations; and avoid presenting course work as engineering, legal, audit, certification, or professional scientific assurance.
4. **Privacy, Security, Confidentiality, Rights, and Responsible Disclosure:** Personal, community, Indigenous, employee, customer, supplier, location, ecosystem, species, land, price, contract, security, proprietary, or operationally sensitive information must not be entered into public AI systems or unnecessarily reproduced. Work must use lawful access, data minimization, safe simulation, responsible disclosure, approved storage, meaningful respect for rights-holders, and appropriate safeguards.

10.5 Communication Expectations

The instructor will respond to emails within 48 hours during the work week. For urgent matters, please indicate 'URGENT' in the subject line. Course announcements will be posted on the LMS. Students are expected to check the LMS and their university email daily.

10.6 Accessibility & Accommodations

Focus University Institute is committed to providing equal access to all students. Students requiring accommodations should contact the Disability Services Office and the instructor at the beginning of the term. Reasonable accommodations will be made to ensure full participation in all course activities.

10.7 Netiquette Guidelines

Online learning requires respectful, professional communication. When participating in synchronous and asynchronous discussions, please use professional language, be

respectful of diverse perspectives, avoid all-caps (which reads as shouting), and provide constructive feedback. Remember that cultural differences may affect communication styles.

11. Additional Resources

11.1 Library & Research Support

- Focus University Institute Library: Ecological economics, environmental and resource economics, systems science, biodiversity, climate, energy, natural capital, public policy, business models, finance, ethics, justice, and interdisciplinary research databases
- Research Librarian consultations available for authoritative scientific, statistical, policy, economic, organizational, community, legal, and methodological evidence

11.2 Writing & Academic Support

- Writing and Learning Support: Graduate systems thinking, quantitative reasoning, spreadsheet modelling, evidence evaluation, decision writing, visualization, presentation, and study consultations
- APA Citation Guide: Purdue OWL (owl.purdue.edu)

11.3 Technical Support

- IT Help Desk: LMS, account, spreadsheet, modelling, systems-mapping, secure-storage, visualization, presentation, accessibility, and approved-tool support
- Boundary-setting, stock-flow mapping, unit checking, scenario, valuation, sensitivity, source verification, safe-disclosure, and AI Usage Statement tutorials in the course 'Getting Started' module

11.4 Professional Development

- UN SEEA, IPBES, UNEP International Resource Panel, IPCC, Stockholm Resilience Centre, OECD, EU, and national statistical offices: Current ecological-economic, resource, climate, biodiversity, policy, accounting, and transition resources
- Peer-reviewed research, organizational and value-chain evidence, public datasets, community and rights-holder knowledge used with appropriate permission and context, and professional analytical resources
- CORE Econ and other instructor-approved open educational resources supporting economics, policy, data interpretation, inequality, environment, and public-purpose analysis

11.5 Suggested Bibliography (APA 7)

Costanza, R., Cumberland, J. H., Daly, H., Goodland, R., & Norgaard, R. B. (2014). An introduction to ecological economics (2nd ed.). CRC Press.

Daly, H. E., & Farley, J. (2011). Ecological economics: Principles and applications (2nd ed.). Island Press.

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- Fanning, A. L., & Raworth, K. (2025). Doughnut of social and planetary boundaries monitors a world out of balance. *Nature*, 646, 47-56. <https://doi.org/10.1038/s41586-025-09385-1>
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- Richardson, K., Steffen, W., Lucht, W., Bendtsen, J., Cornell, S. E., Donges, J. F., Drüke, M., Fetzer, I., Bala, G., von Bloh, W., Feulner, G., Fiedler, S., Gerten, D., Gleeson, T., Hofmann, M., Huiskamp, W., Kummu, M., Mohan, C., Nogués-Bravo, D., ... Rockström, J. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, 9(37), eadh2458. <https://doi.org/10.1126/sciadv.adh2458>
- United Nations, European Commission, Food and Agriculture Organization, International Monetary Fund, Organisation for Economic Co-operation and Development, & World Bank. (2021). System of Environmental-Economic Accounting—Ecosystem Accounting. <https://seea.un.org/ecosystem-accounting>
- United Nations Environment Programme, International Resource Panel. (2024). Global Resources Outlook 2024: Bend the trend—Pathways to a liveable planet as resource use spikes. <https://www.unep.org/resources/Global-Resource-Outlook-2024>
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12. Syllabus Disclaimer

This syllabus represents a plan for the course and may be modified at the instructor's discretion based on pedagogical needs, material changes in ecological conditions, scientific evidence, resource systems, markets, technologies, laws, policies, standards, organizational conditions, data availability, or unforeseen circumstances. Students will be notified of significant changes through the LMS and email. Continued enrollment constitutes acceptance of such modifications.

Focus University Institute

Madrid, Spain

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