Sustainable Supply Chains / Electives / 2025

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FACULTY INFORMATION

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FACULTY BIO

Morteza Pourakbar is an Associate Professor of Supply Chain Management at the Department of Technology and Operations Management, Rotterdam School of Management, Erasmus University, The Netherlands. His main research areas are risk and security management in global supply chains and sustainable operations. Morteza's teaching portfolio includes courses in supply chain, sustainability and risk management in various MSc programs at RSM.

ABSTRACT

This MBA elective, Sustainable Supply Chains, is designed to provide students with an in-depth understanding of how sustainability is reshaping global supply chain strategies. In this course, students will explore key concepts such as the environmental, economic, and social pillars of sustainability, and how evolving regulations are influencing supply chain practices worldwide. The course covers practical tools for sustainability measurement, including Life Cycle Analysis (LCA) and carbon footprinting, alongside cutting-edge strategies for creating circular supply chains. Through case studies and simulations, students will learn how businesses are integrating sustainability into product design, adopting circular business models, and implementing reverse logistics.

EDUCATIONAL GOALS

The course has two main goals:

1. To understand sustainability, including its dimensions, measurement approaches, and the complexity of achieving it.
2. To explore sustainability strategies and develop a deep understanding of the various trade-offs involved.

Learning areas	**Learning outcomes:** Upon completion of the course, students will be able to:
I. Content-related (knowledge, analysis, comprehension)	- recognize and discuss the relevance of sustainability for companies

	- identify, discuss and apply relevant concepts, methods and tools in the area of circularity
II. Skills-related (analytical, social, communicative, managerial)	- analyze particular corporate situations from a sustainability and circularity perspective - evaluate the application of relevant concepts, methods and tool - propose feasible paths forward. - Communicate in a clear, transparent and meaningful way about company issues related to sustainability
III. Attitude-related (behaviour, beliefs, feelings, interactions)	- critically reflect upon their own individual and team performance (e.g., aspects of interdisciplinarity, team dynamics and leadership, relevant to critical alignment required for sustainability).

TEACHING METHODS AND WORKLOAD

Although the course includes some theoretical content, the primary focus is on experiential learning through case studies, simulation games, and both individual and group exercises. A key component of the course is a business simulation game called *The Blue Connection*, in which student teams will work to turn around a loss-making company by implementing circular strategies to improve its profitability.

Description	**Calculation**	**Total**
In-Class sessions:	6 sessions x 3 hours	18 hours
Class Preparation: *(average 2 hours for every 1 hour spent in class)*	18 in-class session hours x 2	36 hours
Team Assignment(s)		20 hours
Individual Assignment(s)		10 hours
Total Course Hours		84 Total hours
EC (Number of study credits)	3 EC x 28	84 Total hours

GRADING AND ASSESSMENT

Course: Insert name	**Assessment formats**		
Educational goals per course (formulated using action verbs (Bloom's Taxonomy)	**Individual Assignment**	**Team assignment**	**total**
After following this course, students will be able to:			
• recognize and discuss the relevance of sustainability for companies.	X	X	
• identify, discuss and apply relevant concepts, methods and tools in the area of sustainability.	X	X	
• analyze particular corporate situations from a sustainability and circularity perspective	X	X	

• evaluate the application of relevant concepts, methods and tool	X		
• propose feasible paths forward		X	
• Communicate in a clear, transparent and meaningful way about company issues related to sustainability		X	
• critically reflect upon their own individual and team performance (e.g., aspects of interdisciplinarity, team dynamics and leadership, relevant to critical alignment required for sustainability).		X	
Weighting factor	65%	35%	100%
Minimum grade required	5.5*	5.5	
When failed, resit option within academic year (Yes/No)	Yes	No	
Form of examination (e.g. MC, Open-book, etc.)	n/a	n/a	
Group / Individual assessment (Group/Individual)	Individual	Group	

* In order to pass the course, each assessment or deliverable (component grade) with a resit option, needs to be at least 5.5. Components with no resit option bear no minimum grade required, but to pass the overall course, the final grade needs to be at least 5.5.

Grades are rounded according to the rounding provisions included in the Examination Regulations (ER) of the programme, and are expressed with 1 decimal point. Not meeting the minimum grade required for either a component grade or the overall course grade determines a fail for the course. Participants can resit a failed component only once. There is no capping of the grade for a resit examination, unless determined by the faculty. The only exception is when the nature of the failed assignment allows for an improvement effort of the same assignment (capped at 5.5 for that component). For this particular course, the faculty has decided that all individual assignments allow for *new resit instructions*

Grade penalties for unauthorized late submissions will be automatically imposed. Penalties for unauthorised late submissions range from 10% to 20% deduction from the examination component depending on the hours/days late. Unauthorised late submissions 4 days or longer after the deadline without prior notification and a reasonable explanation for the late submission, will not be accepted.

Attendance is mandatory and a requirement to pass the course. Missing classes and arriving late may result in grading penalties and even a fail for the course.

Fraud, Plagiarism / Self-plagiarism (Appendix B on Code of Conduct, Examination Regulations -ER-)
The Examination Board defines fraud as "*the action or negligence of a student because of which it is impossible, entirely, or partially, to form a correct judgment about the knowledge, insight, and skills of them or another student*" (ER, 2024-2025). Examples of fraud are cheating, cribbing, plagiarism, freeriding in a team assignment, availability of unauthorized (study) material during a test such as mobile phones, contract cheating/outsourcing/ghost-writing, unauthorized use of generative AI, identity fraud, theft.

Confirmed cases of fraud/plagiarism will lead to (appropriate and proportional) sanctions as defined by the Examination Board in the Rules and Guidelines section of the Examination Regulations (ER). Repetitive cases of fraud/plagiarism lead to expulsion from the programme.

Plagiarism is presenting another person's work as one's own. Plagiarism includes any paraphrasing or summarising of the work of another person or group without acknowledgment, including submission of another student's work as one's own. Plagiarism frequently involves a failure to acknowledge the quotation of paragraphs, sentences, or even a few phrases written or spoken by someone else.

Using ideas from your own prior work (assignment) without referencing the work in your assignment is considered self-plagiarism.

Participants are required to adhere to the 6 principles outlined in the RSM AI guidelines with regard to the use of Artificial Intelligence Platforms such as ChatGPT and related software/tools. The unauthorised use constitutes violation of plagiarism/ fraud policy. For this particular course, the faculty promotes an "*embraced*" use of AI.

For more information about academic integrity and AI please refer to the Programme's Examination Regulations and RSM AI guidelines documents on the Student Hub.

Assessment / Deliverable:	**Individual or group:**	**(Due) date and hand in location:**	**% of final grade:**
Preparation and post-class assignments (after session 1 and before session 2)	Individual	TBD	25%
TBC reflection and learning	individual	TBD	40%
Sustainability strategy	team	TBD	35%

For all Canvas submissions, please make sure to include the student name and programme name in the title of the file submission, as well as within the document itself (on the cover page).

REQUIRED TEXTBOOK(S) AND READINGS

The required literature and other materials used in class will be made available via Canvas.

DETAILED COURSE SCHEDULE

Session 1	
Topics:	- sustainability definition and dimensions - measurement at the product level - Introduction to the Life Cycle Analysis(LCA)
In class exercises:	Life cycle analysis of a simple product
Readings:	Toffel, Michael W., and Stephanie Van Sice. "Carbon footprints: methods and calculations." *Harvard Business School Technology & Operations Mgt. Unit Case* 611-075 (2011). Others: TBA

Case:	Circulr: Creating Sustainable Value from an Empty Jar

Session 2	
Topics:	- measuring sustainability at the supply chain level - carbon footprinting - GHG emission protocol
In class exercises:	The Blue Connection round 1 and analysis of results
Readings:	Toffel, Michael W., and Stephanie Van Sice. "Carbon footprints: methods and calculations." *Harvard Business School Technology & Operations Mgt. Unit Case* 611-075 (2011).
Case:	CMA CGM: Reducing the Carbon Footprint of Container Shipping

Session 3	
Topics:	- sustainable supply chain strategy – reverse logistics - closed loop supply chains – challenges and complexities - value framework in a closed loop supply chain
In class exercises:	The Blue Connection Round 2: "Remanufacturing & Recycling" Detailed analysis of Round 2 results The Blue Connection Round 3: "Lease & subscription" (to be finished before session 4)
Readings:	Wilson, Matthew, and Sean Goffnett. "Reverse logistics: Understanding end-of-life product management." *Business Horizons* 65.5 (2022): 643-655.
Case:	

Session 4	
Topics:	- sustainable supply chain strategy – product design and business models
In class exercises:	The Blue Connection round 3 analysis and results
Readings:	Atasu, Atalay, Céline Dumas, and Luk N. Van Wassenhove. "The circular business model." *Harvard Business Review* 99.4 (2021): 72-81.
Case:	

Session 5	
Topics:	- environmental regulations and their implications for supply chains - extended producer responsibility
In class exercises:	The Blue Connection Rounds 4-6: strategy & revenue models to be chosen by the teams
Readings:	Atasu, Atalay. "Operational perspectives on extended producer responsibility." Journal of Industrial Ecology 23.4 (2019): 744-750. Gui, Luyi, et al. "Implementing extended producer responsibility legislation: a multi-stakeholder case analysis." Journal of Industrial Ecology17.2 (2013): 262-276.
Case:	

Session 6	
Topics:	- socially responsible supply chains
In class exercises:	The Blue Connection Round 7: strategy & revenue models to be chosen by the teams
Readings:	TBA
Case:	

ASSIGNMENTS DESCRIPTION

Individual assignment 1.a: Circulr Case Study

This assignment ask students to answer some questions related to Circulr case study after class discussion.

Individual assignment 1.b: CMA CGM Case Study

This assignment ask students to read CMA CGM case study in preparation for a session and answer a couple of questions.

Individual assignment 2: closing the loop of The Blue Connection

You will reflect on your experience with The Blue Connection business simulation game, guided by specific instructions that will be provided on Canvas during the course.

Team assignment: Circular Economy and its challenges

Objective: Choose a company that is currently operating with a predominantly linear business model but shows potential and motivation to transition toward circularity. If the company is multinational, focus on one specific country where it operates. Clearly define the company's products, customers, and business model.

Structure Your Assignment as Follows:

a) Company Value Chain (Linear Setup): Describe the company's current end-to-end value chain, highlighting how materials, products, and information flow through it from sourcing to disposal.

b) Drivers for Circular Transformation: Identify and explain the internal and/or external pressures pushing the company to adopt circular practices. Consider market dynamics, customer expectations, compliance, or sustainability goals.

c) Relevant R-Ladder Strategies: Select and justify the most feasible strategies from the R-ladder (e.g., Refuse, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover). Consider technical, operational, and business feasibility in your justification.

d) Barriers and Enablers (Beyond the Company):
Based on empirical data and external sources, identify five key external enablers or barriers the company may face. Use concepts from Chapter 3 of the textbook (e.g., government policy, interfirm collaboration, ecosystems, training and education).

e) Key Areas for Action & Implementation Approach: Synthesize the previous sections and identify the company's priority areas for action. Propose specific, practical actions to initiate circularity, and explain how you would implement them for lasting impact.

ASSIGNMENTS RUBRICS

Rubric for assignments 1.a and 1.b

Criteria (weight)	Proficient Performance (Meets or Exceeds Expectations)
Calculations (50%)	Items asked are calculated properly
Reasoning (25%)	The reasoning is explained clearly
Recommendations (25%)	Recommendations made are supported by evidence.

Rubric for individual assignment 2

Criteria (weight)	Proficient Performance (Meets or Exceeds Expectations)
Learning Points Identified (25%)	Clearly articulates 3–4 significant, relevant learning points gained from the simulation experience.
Use of Critical Incidents (25%)	Selects and analyzes specific gameplay events (positive or negative) that shaped learning or influenced outcomes.
Reflective Insight & Future Relevance (30%)	Offers thoughtful reflection on personal/team behavior and convincingly connects the learning to future real-world business contexts.
Clarity, Structure, and Style (20%)	Writing is logically structured, concise, and grammatically correct; adheres to length and formatting guidelines.

Rubric for team assignment 1

Criteria(weight)	Proficient Performance (Meets or Exceeds Expectations)
Understanding of Company Context (10%)	Clearly defines the company, its country-specific operations, products, customers, and linear business model.
Value Chain Analysis (10%)	Accurately describes the linear value chain with clear stages and insights into current material/product flows.
Drivers for Circularity (15%)	Identifies strong, well-reasoned internal/external drivers supported by evidence or logic.
Application of R-Ladder Strategies (15%)	Selects and explains technically and practically feasible R-strategies with justification tailored to the company.
Use of Empirical Evidence (25%)	Integrates reliable external sources to identify and analyze five specific barriers/enablers beyond the company.
Strategic Recommendations & Implementation (15%)	Provides actionable, relevant recommendations and outlines a realistic plan for implementation, grounded in earlier analysis.
Structure, Clarity & Academic Style (10%)	Well-organized, clearly written, free of major errors; uses data and citations appropriately; adheres to assignment length.