35E03000 Sustainable supply chains, 6 ECTS

SYLLABUS (13.8.2023)

Instructor's contact information	Course information
Katri Kauppi katri.kauppi@aalto.fi T208, Ekonominaukio 1 Available for on campus, and Teams / zoom meetings https://people.aalto.fi/katri.kauppi	Information and Service Management master's programme elective 2023-2024, Fall period 1 On campus module with options for online participation Language of Instruction: English Course Website: https://mycourses.aalto.fi/course/view.php?id=40806 Teaching Assistant: Lauri Kuula, lauri.kuula@aalto.fi

1. OVERVIEW

The course topics include the triple bottom line in supply chain context, benefits of sustainability in supply chains, environmental issues in purchasing and supply, sustainability in logistics, social sustainability in supply chains, sustainability certifications and implementation issues. Both organization and industry perspectives are discussed on the course.

2. PREREQUISITES

Recommended Tuotantotalouden perusteet 35A00310 or similar principles of operations management course

3. LEARNING OUTCOMES

The course is intended to provide an overall understanding of the triple bottom line i.e. economic, environmental and social sustainability in the context of supply chains. Students will understand the various ways in which environmental and social sustainability strategies and practices can be incorporated into different stages of a supply chain, and how these will impact supply chain (economic) performance. The course will also provide insights on the challenges related to the implementation issues in supply chain sustainability for organizations as well as for some key industries.

4. ASSESSMENT, GRADING, EXAM FEEDBACK

I.	Case A&W Canada (groupwork)	15%
II.	Case Hewlett Packard (groupwork)	15%
III.	Multiple choice quizzes based on lecture videos	15%
IV.	Essay on biodiversity or water management in supply chains	15%
V.	Analysis of a company sustainability report (groupwork)	20%
VI.	Exam (open book exam but in computer class)	20%

Please note that the exam needs to be passed to pass the course, i.e. you must receive at least 50% of points in the exam to pass the course regardless of the points in the other assignments.

Extra points (above 100%) available for:

- Class participation: if you participate in at least 5 lectures on campus you get 2 points extra (lectures included in this point scheme: 4, 6,7,8,9,11 and 12)
- Course feedback survey: 1 extra point for filling the survey

- Sustainable SCM decision making experiment 1-2 points (based on performance in the experiment, at minimum 1 point)

Group work is done in groups of 4 students.
For details on the assignments, see separate instructions on mycourses for each assignment.

NOTE: all 4 quiz sets carry equal weight, i.e. 1/4th of the 15% assigned to quizzes.

NOTE: You should be able to follow the development of your grade in the gradebook on mycourses. However, the description above on how the final grade is formed from the different assignments is the one that will be adhered to should there be any conflicts between this document and the gradebook in how the overall grade is shown to be formulated.

5. READINGS

LECTURE 1 – Why sustainable supply chain management?

- Govindan, K., Rajeev, A., Padhi, S. S., & Pati, R. K. (2020). Supply chain sustainability and performance of firms: A meta-analysis of the literature. Transportation Research Part E: Logistics and Transportation Review, 137, 101923.

LECTURE 2 - The triple bottom line – management and measures of economic, social and environmental sustainability in SCM

- Rogers, D. S. (2011). Sustainability is free: the case for doing the right thing. Supply Chain Management Review, 15(6).
- Foerstl, K., Meinlschmidt, J., & Busse, C. (2018). It's a match! Choosing information processing mechanisms to address sustainability-related uncertainty in sustainable supply management. Journal of Purchasing and Supply Management.
- Neri, A., Cagno, E., Lepri, M., & Trianni, A. (2021). A triple bottom line balanced set of key performance indicators to measure the sustainability performance of industrial supply chains. Sustainable Production and Consumption, 26, p. 648-691.

LECTURE 3 - Sustainable transportation and warehousing

- Silva, V., Amaral, A., & Fontes, T. (2023). Sustainable urban last-mile logistics: A systematic literature review. *Sustainability*, *15*(3), 2285.
- Bartolini, M., Bottani, E., & Grosse, E. H. (2019). Green warehousing: Systematic literature review and bibliometric analysis. *Journal of Cleaner Production*, *226*, 242-258.

LECTURE 4 - Green procurement

- Kristensen, H. S., Mosgaard, M. A., & Remmen, A. (2021). Circular public procurement practices in Danish municipalities. Journal of Cleaner Production, 281, 124962.

LECTURE 5 – Material usage, biodiversity and water in supply chains

- Hallam, C., & Contreras, C. (2016). Integrating lean and green management. *Management Decision*, *54*(9), 2157-2187.
- Cole, D., Narayanan, S., Connors, E., Tewari, M., & Onda, K. (2023). Water stress: Opportunities for supply chain research. *Production and Operations Management*.

- Salmi, A., Quarshie, A. M., Scott-Kennel, J., & Kähkönen, A. K. (2023). Biodiversity management: A supply chain practice view. Journal of Purchasing and Supply Management, 100865.

LECTURE 6 – Circular Economy

- Amir, S., Salehi, N., Roci, M., Sweet, S., & Rashid, A. (2022). Towards circular economy: A guiding framework for circular supply chain implementation. *Business Strategy and the Environment*.
- Bocken, N. M., De Pauw, I., Bakker, C., & Van Der Grinten, B. (2016). Product design and business model strategies for a circular economy. Journal of Industrial and Production Engineering, 33(5), 308-320

LECTURE 7 Sustainability in service production

- Chan, T. Y., Wong, C. W., Lai, K. H., Lun, V. Y., Ng, C. T., & Ngai, E. W. (2016). Green service: construct development and measurement validation. Production and Operations Management, 25(3), 432-457.

LECTURE 8 – 9 Guest lectures: No readings assigned

LECTURE 10 – Socially sustainable SCM

- Yawar, S., and Seuring, S. (2017), "Management of social issues in supply chains: a literature review exploring social issues, actions and performance outcomes." *Journal of Business Ethics* 141, no. 3 (2017): 621-643.
- Stevenson, M. and Cole, R. (2018), "Modern slavery in supply chains: a secondary data analysis of detection, remediation and disclosure", Supply Chain Management, Vol. 12 No. 3, pp. 81-99

LECTURE 11 - Sustainability certifications

- Pederson, A. (2014). Viewpoint: Fair Trade and Human Rights in the End-to-End Supply Chain. Supply Chain Management Review, November, p. 44.-48.
- Jellema, S. F., Werner, M. D., Rasche, A., & Cornelissen, J. (2022). Questioning impact: a cross-disciplinary review of certification standards for sustainability. Business & Society, 61(5), 1042-1082.

LECTURE 12 - Implementation issues – how to get started

- Fawcett, S.E. et al. 2015. Sustainability as strategy: caught in the luxury trap. Supply Chain Management Review.
- Saenz, H. and Hinkel, J. 2022. Supply chain traceability is key to sustainability—and improved performance. Supply Chain Management Review, July/August, p.42-47

6. SCHEDULE

The course is primarily held in classroom, V001&V002 at the Business School Building, Ekonominaukio 1. For some classes, there is the opportunity to join live via zoom, for others a lecture recording is provided afterwards in Mycourses (the recording will only cover the lecture parts, not the interactive/group work parts done in class). **PLEASE GO THROUGH SCHEDULE BELOW IN DETAIL!!**

Week	Session	Date & Time	Live lectures ON CAMPUS PLUS either zoom participation and/or recording of lecture available afterwards (check per each lecture)	Pre-recorded lectures (Watch in your own time during the week and fill in quiz)	Assignment Due Dates
Week 1 5.-11.9.	Lecture 1	Monday 4.9.2023 at 12.15-13.45	*Course introduction* *Why sustainable supply chain management?* Live lecture in class AND via zoom, recording provided afterwards		Video quizzes due Sunday 10.9 at 23.59
	Lecture 2	Pre-recorded video lecture	*No live class for this lecture, pre-recorded videos plus quiz*	*The triple bottom line – measures of economic, social and environmental sustainability in SCM* Three short pre-recorded videos • What is sustainable SCM • Measuring sustainability in a supply chain • CO2 measurement and reduction in supply chains	
Week 2 12.-18.9	Lecture 3	Pre-recorded video lecture	*No live class for this lecture, pre-recorded videos plus quiz*	*Sustainable transportation and warehousing* Two pre-recorded videos • Sustainable transportation • Sustainable warehousing • Sustainable logistics in e-commerce	Case A&W Canada due 12.9 at 23.59 Video quizzes due Sunday 17.9 at 23.59
	Q&A	Monday 11.9.2022 12.15-13.00	*45 min voluntary Q&A session with Prof Kauppi in class & zoom, come and discuss about sustainable supply chain issues and/or ask if there is anything unclear about the assignments* Live lecture in class AND via zoom, NO recording provided afterwards		
	Lecture 4 & case discussion	Wed 13.9 at 12.15-13.45	*Case discussion A&W Canada* *Lecture on Green procurement* *Live lecture in class plus recording available afterwards (of lecture only, not of case discussion)*		

Week 3 19.9-25.9	Lecture 5	Monday Pre-recorded video lecture	*No live class for this lecture, pre-recorded videos plus quiz*	Material usage, biodiversity and water in SCM, *4 pre-recorded videos*: • Green packaging • Lean and green • Biodiversity in SCM and transportation • Water usage and SCM	Case HP Canada due 19.9 at 23.59 Video quizzes due 24.9 at 23.59
	Lecture 6	Wednesday 20.9 at 12.15-13.45	Case discussion HP Canada Lecture on Circular Economy *Live lecture in class plus recording available afterwards (only for lecture, not case discussion)*		
Week 4 26.9 – 2.10	Lecture 7	Monday 25.9 at 12.15-13.15	Sustainability in service production *Live lecture in class plus recording available afterwards*		No assignments due this week
	Lecture 8	Wednesday 27.9 at 12.15-13.45	Guest lecture by Päivi Wood, Confederation of Finnish Industries, “External requirements on supply chain sustainability” *Live lecture in class*		
Week 5 3.10 – 9.10	Lecture 9	Monday 2.10 at 12.15-13.45	Guest lecture by Elina Gustafson and Elina Rosendahl, Posti Oyj, “Challenges and solutions to Circular Economy” *Live lecture in class, no recording provided afterwards*		Biodiversity/ water essay due 6.10 at 23.59 Video quizzes due 8.10 at 23.59
		Wednesday 4.10 at 12.15-13.45	*Sustainable SCM decision making experiment* *45 min Q&A session, ask about the assignments, exam or the course topics overall* *Live lecture in class AND via zoom, no recording provided afterwards*		
	Lecture 10	Pre-recorded video lecture		*Socially sustainable SCM,* Three pre-recorded videos • What is social sustainability • Codes of conduct	

				• Challenges in implementing social sustainability	
Week 6 10.10 – 16.10	Lecture 11	Monday 9.10 at 12.15-13.45	*Sustainability certifications* Lecture and class debate *Live lecture in class, no recording provided afterwards*		Sustainability report analysis due Thursday 12.10 at 23.59
	Lecture 12	Wednesday 11.10 at 12.15-13.45	*Implementation issues – how to get started* Course wrap-up *Live lecture in class and via ZOOM, recording provided afterwards*		
Exam week	EXAM	Wednesday 18.10 13.00-16.00	Course exam on campus		

7. ETHICAL RULES

Aalto University Code of Academic Integrity and Handling Thereof>

https://into.aalto.fi/pages/viewpage.action?pageId=3772443

Aalto University guidelines for use of AI: https://www.aalto.fi/en/services/guidance-for-the-use-of-artificial-intelligence-in-teaching-and-learning-at-aalto-university?check_logged_in=1

See individual assignments for instructions on use of Artificial intelligence.

8. OTHER ISSUES