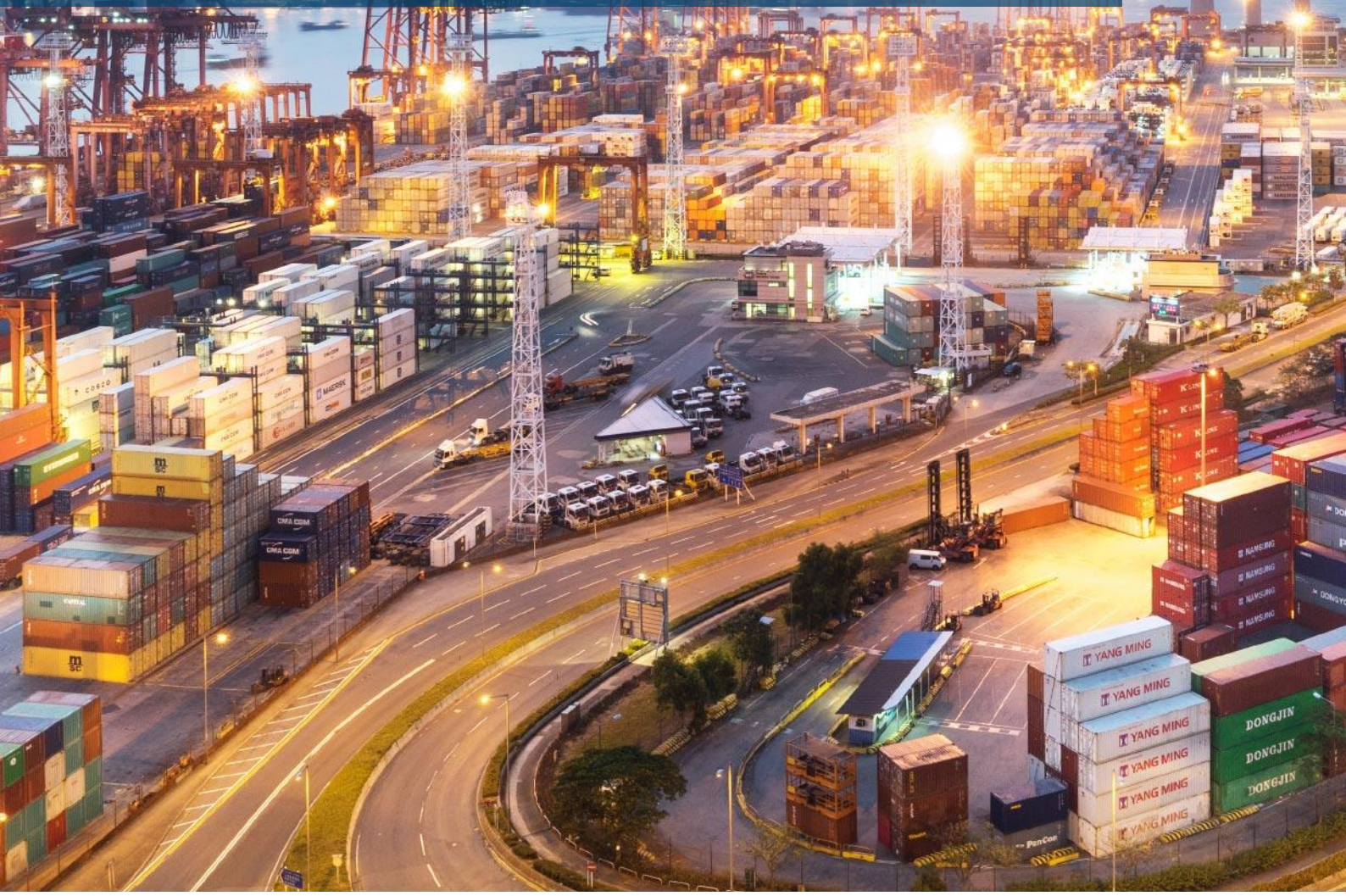
Course catalogue

Master Supply Chain Management (MSc)

Year Sep 2025 Aug 2026



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Breda University
OF APPLIED SCIENCES

Introduction

This is the 6th edition of the course catalogue of the master's programme Supply Chain Management by Breda University of Applied Sciences (BUas) for the Academic Year September 2025– August 2026.

Section 1 explains the idea, positioning and competency set of the master's programme. In section 2 a description is presented of the two semester periods and an overview of the curriculum with the different modules. Section 3 contains the outline of the module descriptions.

Students will get a student manual for every module. This will be made available on the Electronic Learning Environment (Brightspace) of BUas.

The course catalogue is part of TER (Teaching & Examination Regulations) of the Master Supply Chain Management of Breda University of Applied Sciences, Academic Year 2025-2026.

1. Master of Supply Chain Management

Competencies

The competency set of the master's programme International Supply Chain Management fulfils to the professional master standard and the Dublin Descriptors for master's programmes. The competency set has been mirrored with the EMLog programme (ELA standards, EQF level 7) and with competency profiles of other Dutch professional master's programmes in supply chain management. The competencies have been compiled in cooperation with and after consultation of the Logistics Industry Committee of Breda University of Applied Sciences (BUas).
The competency set is as follows:

Context:
In displaying strategic, analytical, design, implementation and leadership competencies, by using justified chosen research methods and techniques, and by taking into account organisational conditions, data-complexity, social- and ethical responsibilities, cross-cultural differences and (technological) developments in a changing international environment, graduates are able to:

> A: analyse and evaluate supply chains from a strategic perspective.
> B: develop a supply chain improvement plan that supports a sustainable business model.
> C: create an approach for implementation of the supply chain improvement plan.
> D: demonstrate leadership skills by influencing the improvement process.

In the extension of acquiring these competencies, students will also create, during the master period, a basis for autonomous personal growth and lifelong learning.

Explanation of the used terminology

Supply chains:
This refers to different functionalities for improvement within the supply chain: transportation, warehousing, inventory, operations and procurement. These functionalities are analysed and evaluated in a supply chain context (in relation to suppliers and customers). Supply chains apply to a cross-cultural and international context. If e.g. local sourcing is discussed, which may be domestic, it is embedded in a broader regional or global supply chain context.
Supply chain improvement plan:
A renewed and innovated design of a supply chain including a proposal and roadmap for improvement.
Sustainable business model:
The supply chain improvement plan adds value from a social, a financial-economic and an environmental perspective (triple bottom line) on a cross-company level.
Approach for implementation:
Demonstration of change management skills by delivering an implementation plan, by developing support among stakeholders and by creating insight in possible transition effects. Stakeholder engagement is applied at an intercultural level at both inter- and intra-organisational levels within a company or institution.

Leadership skills:
The ability to inspire, motivate and persuade others, and to reflect on his/her personal development as an upcoming leader.

Didactic model curriculum

The different modules of the curriculum all contribute to the mastery of the competencies. Mastering the competencies leads to three stages on which the curriculum is based in which students take three levels:

- Stage 1 (week 1 - 4), taking the 1st level: Demonstrating competencies in a standardized environment (classroom) on a multidisciplinary level, using real-life context cases, bridging and leveling to the professional master level, and referring to theoretical, applied and behavioral knowledge and skills. Considered from the Taxonomy of Bloom, the emphasis lies on understanding and applying, by mainly using masterclasses type A alternated by occasionally using masterclasses B. In masterclasses A theory is taught and applied by using real-life context cases. In masterclasses B real-life context cases are discussed, analyzed and evaluated by using theory.

- Stage 2 (week 4 – 19), taking the 2nd level: Demonstrating competencies in a standardized controlled environment (classroom) on a multidisciplinary level, using real-life context cases, and referring to theoretical, applied and behavioral knowledge and skills. Considered from the Taxonomy of Bloom, the emphasis lies on understanding, applying, analyzing, evaluating and creating, by using masterclasses both type A and B, with emphasis on masterclass type B.

- Stage 3 (week 20 – 40), taking the 3rd level: Demonstrating competencies in an uncontrolled complex environment (professional context) on an integrated and interdisciplinary level, referring to theoretical, applied and behavioral knowledge & skills. Considered from the Taxonomy of Bloom, the emphasis lies on applying, analyzing, evaluating and creating. [1]

Towards the end of the first semester students need to get to their final draft of the thesis topic and graduation placement. The thesis coordinators need to approve the handed in topics and placements. The deadline for thesis topic approval is January 16, 2026 @ 17.00 hours. The course Integrated Supply Chain Cases (ISCC) bridges towards the uncontrolled complex characteristics of a professional environment and forms the actual start at the graduation company. After handing in the research proposal, students start with the thesis period. Students will continue their path in the professional environment and will be challenged to demonstrate the acquired competencies by taking the 3rd level.

[1] The idea and concept behind the three stages model as presented is developed by the founders of this master's programme and based/derived from Miller, G.E. (1990). The assessment of clinical skills/competence/performance. *Academic Medicine, 65* (9), 63-67.

2. Programme of the Master of Supply Chain Management

1st semester week 1-19, stage 1-2: Theoretical backbone and an approved thesis topic

In the first semester students come to classes prepared in order to deepen knowledge and to exchange views with others. Knowledge building requires engaged students thoroughly preparing their classes, so that discussions in classes with peers and lecturers deepen their knowledge. The lecturer switches between casuistry and theory in order to enhance understanding, analysis, synthesis and evaluation. Different didactical approaches are applied. In masterclasses type A (classical approach) theory is explained and illustrated by practical casuistry. In masterclasses type B practical cases are linked to theory. Also training sessions and a business games are included and are part of the courses Supply Chain & Research Fundamentals, Leadership and Business Intelligence. These courses all contribute to a theoretical foundation; in this period a theoretical layer is build and necessary skills are trained. Students are assessed (mostly) at the end of the semester by taking examinations and by handing in papers. The first semester starts with the module Supply Chain & Research Fundamentals (stage 1). Fundamentals on logistics, operations and supply chain management are taught on one hand and research fundamentals (academic writing and statistics) on the other. The second part (stage 2) of the second semester builds upon that and takes off with the modules Change & Innovation, Supply Chain Strategy, Business Intelligence, Research Methods and Leadership.

While the base is formed, students have to find a suitable host company including an approved thesis topic by the thesis coordinators before week eighteen of the first semester. The study timetable facilitates time for networking[2] and finding the graduation company[3]. By appointing a mentor from day one (and over time a graduation supervisor), students will be encouraged in their search for an appropriate thesis topic.
In the learning communities[4] for the master's programme, groups of students are formed and will prepare a network event. The idea is to share knowledge with professionals from the field and to pave the way for a matching process between students and professionals in light of finding a thesis topic.

2nd semester, week 20-40, stage 3: Integrated Supply Chain Cases (ISCC), Research Proposal and Thesis

The course Integrated Supply Chain Cases (ISCC) bridges towards the uncontrolled complex characteristics of a professional environment and forms the actual start at the graduation company.

[2] This is a possibility that is created within the roster. This time can be used for self-study as well.

[3] This condition will be discussed with the prospective student and is subsequently included in the communication before enrolment and at the kick-off of the master programme.

[4] A learning community connects students, lecturers, researchers and industry professionals with each other. Knowledge sharing through exchanging ideas, concepts, methods, experiences, etc. will stimulate the performance and achievements of the individual students as well as the industry professionals and lecturers.

During the weeks (21-23) students are expected to be at the graduation company for half of the time and in class for the other half. Students will perform a contextual company analysis for their graduation company including an internal and external part. The internal part focusses on organisational maturity of the company in the fields of strategy, business intelligence, change & innovation and leadership. The external part focusses on the business environment of the company including their supply chain positioning and market dynamics. The contextual company analysis will be the foundation for the research proposal. Apart from the contextual company analysis, students also simultaneously perform two supply chain modelling cases in class. These cases are also part of ISCC and count for 50% besides the contextual company analysis. In case students could not start this module with an approved thesis topic, it is still possible to perform a contextual company analysis based on a case-study after consultation with the lecturer. This will concern a case-study from literature combined with updated online information about the chosen company. This allows students to complete this module without losing time in the process.

By the end of week twenty-three students start with the module Research Proposal (RP) by following two days of masterclasses, that will support the making of these RPs. At the end of week twenty-seven, students must hand in their RP.

After handing in their RP, students start with the thesis period. Students will continue their path in the professional environment and will be challenged to demonstrate the acquired competencies by taking the 3rd level. According to BUas' educational vision, knowledge development and sharing with the industry is the intended development path and the final step in this master's programme. During this phase, students fully concentrate on their thesis. This practical approach presupposes further deepening of theoretical insights during the thesis period. This brings together both the substantive qualities and the ability to make a start with implementing change in an organisation, which is aligned with the starting principle of the master's programme. Corresponding to 18 ECTS, the thesis constitutes 30% of the master's degree and thus indicates the importance of the actual application of what has been learned, as well as the explicit goal of influencing and encouraging the implementation process of the proposed improvement solutions. During the thesis, students are challenged to come to an analysis, design and implementation approach for the proposed, improved or innovated supply chain of the graduation company. On top of that, students carry out a part of their implementation approach by generating insight in expected transition effects of the implementation process and by creating awareness and support among stakeholders. The latter enables them to demonstrate their leadership skills. Students develop different aspects of their personal profile based on the Lumina-trainings. This requires a personal reflection of these aspects. This reflection relates to what is executed and to what is accomplished, in realizing an implementation approach and by demonstrating leadership skills. This reflection should also relate to the peer reviewed literature on leadership. Students will conclude this period by handing in a thesis and leadership report.

The RP & thesis period will be supported by online learning community sessions (graduation tables). Through the graduation tables, new insights are gained and knowledge will be shared. In this learning process it is not intentional to share any data for which the community needs to be protected. This community is protected by agreeing orally to non-disclosure of data which applies to all participants. The graduation companies are invited to participate in the learning community.

Individual supervising will be an important part of this master's programme. This is carried out by a lecturer on behalf of BUas in close cooperation with the supervisor from the graduation company.

Entrance criteria for the Research Proposal and Thesis

The following entrance criteria are applicable for RP and Thesis:

- Approved thesis topic and graduation placement by the thesis coordinators before January 16, 2026, 17.00 hours. This will enable the start of the graduation trajectory on February 9, 2026. For a delayed start on April 6, 2026, students need to get this approval before March 20, 2026, 17.00 hours.
- In the event that three or more resits have to be taken, given the results of the first semester, the focus from students will be drawn to the resit weeks twenty-nine and thirty. In that case, the start of the graduation trajectory will be delayed to April 6, 2026. A study plan will be discussed with their mentor about when to resubmit insufficient papers. When students start at April 6, they need to include in their RP a dedicated contextual company analysis as an appendix. For this, two additional weeks are incorporated in this RP trajectory. It is assumed that students in this case have already completed ISCC and have been graded for this module including the contextual company analysis based on a case-study from literature. Therefore, in that situation students will only make a contextual company analysis to support their RP. This trajectory will enable students who have passed all resits, to still be able to finish the master's programme including its thesis, before the end of the academic year.
- In the event of an insufficient score for RP, students are obliged to first make necessary revisions to their RP. In case of minor revisions students continue with thesis and not lose any time. In case of major revisions, full focus is required for adjusting RP and the thesis trajectory will be delayed to August. In the latter case students can still finish the master's programme before the end of the academic year (if of course all previous modules have been passed). The supervisors and lecturers of the module RP decide by mutual discussion for students concerned, whether a minor or major revision is required.

Artificial Intelligence (AI)

The master's programme has implemented thoughtful AI policies relating to the programme as a whole and for each individual module conform BUas standards. These standards are written in a central BUas document and apply to the possible use of content generation by large language models and apply to all bachelor - and master programmes. In case AI is allowed to be used, students should provide transparent insight and correct references on how they applied AI.

There is a restrain about using content generation by large language models. Education is concerned with the learning process. It is expected that students analyse information, and assess for themselves if the information is relevant, valid, and reliable. Hence, students synthesize and consolidate information and report on their findings in a professional way. These activities are part of the learning process of students. During the programme, students write papers and carry out a thesis using proven research methods. Content generation based on large language models produce output that is quite impressive, but it is not useful for these purposes.

Therefore the use of AI is restricted and often only allowed in the brainstorming, planning and pre-research phase, but final submission should be free from AI. Furthermore, specific tasks can be allowed such as generating or improving R-codes for statistical analysis and to use AI-powered transcription tools to transcribe interviews. It is also allowed to improve the quality of writing, by using the Word features or e.g. DeepL, but it cannot be used to translate large amounts of text. This

strictness is also inspired by the fact that it is not allowed to enter company-specific input (one way or another) as a prompt into an AI tool that may result in confidentiality issues with companies. On top of that, e.g. leadership report contains student's personal information which should not circulate as such on the internet.

Curriculum design

The curriculum design is based on a T-shaped profile. The courses embody the required range of both social and analytical knowledge & skills. Students develop themselves through generating knowledge and skills on a strategic level in the field of supply chain management and by working on supply chain cases that require an interdisciplinary approach. The starting point is a basis on an operational and tactical level in logistics, operations and supply chain management. Hence, in the axis of the programme, we find the supply chain modules. Students develop themselves throughout this master programme to become supply chain specialists and eventually future supply chain leaders. See figure 3.1 for the T-shaped curriculum design:

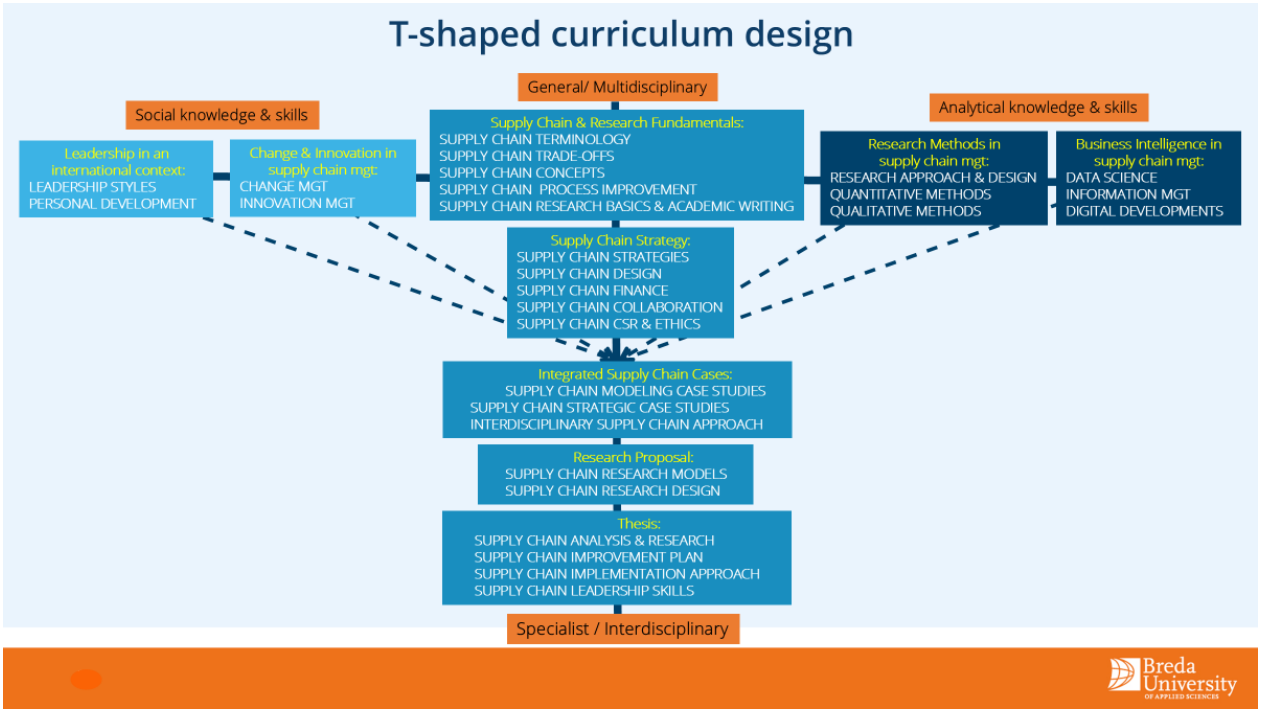

Figure 3.1. T-shaped profile

Figure 3.2 shows an overview of the different modules that compose the curriculum in a chronological order which also mark the four stages as discussed:

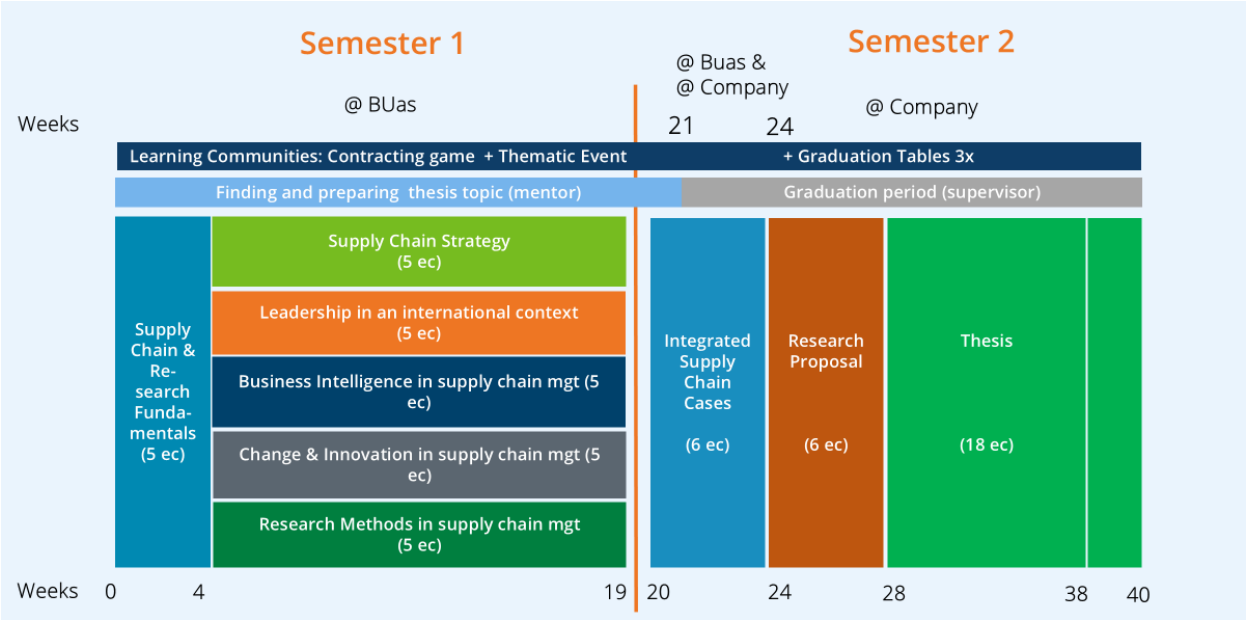

Figure 3.2 Curriculum composition

3. The module descriptions

The order of appearance of the module descriptions in this course catalogue is as follows:

1. Supply Chain and Research Fundamentals (5 ECTS)
2. Supply Chain Strategy (5 ECTS)
3. Leadership in an international context (5 ECTS)
4. Research Methods in supply chain management (5 ECTS)
5. Business Intelligence in supply chain management (5 ECTS)
6. Change & Innovation in supply chain management (5 ECTS)
7. Integrated Supply Chain Cases (6 ECTS)
8. Research Proposal (6 ECTS)
9. Thesis (18 ECTS)

BSE1.SCRF-1SCM	Supply Chain & Research Fundamentals
Size	5 ECTS
Contribution to competencies	A. Analyse and evaluate supply chains from a strategic perspective. B. Develop a supply chain improvement plan that supports a sustainable business model. C. Create an approach for implementation of the supply chain improvement plan. D. Demonstrate leadership skills by influencing the improvement process.
Learning goal	This module enables students to: • strengthen their previously acquired fundamental knowledge of logistics, operations and supply chain management, and acquire knowledge about strategic supply chain thinking. • strengthen their previous acquired knowledge and skills in academic writing and statistics, and acquire new knowledge and skills using the statistical software R.
Objectives	At the end of this module the student is able to: 1. Understand and apply fundamental terminology, concepts and triple bottom line trade-offs in supply chain management. 2. Analyse and evaluate business policies and disruptions and how they can impact supply chains on a strategic, tactical and operational level. 3. Apply and evaluate different leadership roles in analysing and implementing sustainable business decisions and strategy in supply chain management. 4. Learn to read academic articles critically and use them as models for their own writing projects. 5. Read, synthesize and criticise articles for the purpose of their own research project. 6. Apply the basics of academic writing to a paragraph and a report. 7. Perform basic descriptive and inferential statistics in several circumstances and interpret the results in an applied context. 8. Use the software package R to perform basic descriptive and inferential statistics.
Subjects	Subjects covered in this module include: ▪ Demand planning and forecasting ▪ Manufacturing and operations ▪ Procurement and suppliers ▪ Inventory management ▪ Distribution management (transportation & warehousing, last mile, transport modalities & intermodality, LSPs & shippers) ▪ Ethics, Sustainability & Closed loop supply chains ▪ Trade compliance ▪ Academic writing ▪ Types of sources and how to use them to prepare a literature review ▪ Descriptive and inferential statistics ▪ Software R and statistical packages

Literature	▪ Chopra, S. (2019) *Supply Chain Management: Strategy, Planning and Operation*, 7th edition, Global Edition ISBN 9781292257891 ▪ Zijm, W.H., Klumpp, M., Heragy, S., Regattieri, A. (2019) *Operations, Logistics and Supply Chain Management*. Springer. ▪ Gray, D. E. (2022). *Doing research in the real world* (5. ed). Sage. ISBN 9781529742442 ▪ Peer reviewed articles related to the topics examined throughout the course from publications with a high Scientific Journal Rank (SJR). *Can be found via* https://www.buas.nl/library/library-metasearch*, while some will be provided by the course instructors via proxy links.*
Planning 1st semester	Weeks: 1-4 Each week will involve the following: 2 lectures of 2 contact hours for supply chain fundamentals 2 lectures of 3 contact hours for research fundamentals 4 to 6 contact hours supply chain management game (Triple Connection) Week 4: Hand in assignment management game Week 4: Written exam
Examination	The examination will be as follows: Written exam: 75% (partly open-ended questions and partly multiple-choice) Group assessment supply chain management game: 25% (based on game results and a paper) Each examination component must be assessed with a minimum of 5.5 to pass the module. Formative assessment, especially in Masterclasses B (training exam questions and cases).
Module owner	A. Mandemakers (PhD candidate)
Professors	A. Mandemakers (PhD candidate), A. Kokkinou (PhD), R. van der Wegen (MA) and M. Miranda-Ackerman (PhD)

BSE1.SCST-1SCM	Supply Chain Strategy
Size	5 ECTS
Contribution to competencies	A. Analyse and evaluate supply chains from a strategic perspective. B. Develop a supply chain improvement plan that supports a sustainable business model.
Learning goal	This module enables students to analyse, evaluate and propose a Supply Chain Strategy, impacted by macro & meso developments. This Supply Chain Strategy focuses on how to create market competitiveness and added value to customers.
Objectives	At the end of this module the student is able to: 1. Analyze and evaluate the current corporate and supply chain strategy and set-up related to the dynamics and impacts of external influences within the context of the business, industry, market. Determine the strategic fit and define a relevant improvement topic. 2. Compare different perspectives of the improvement topic within the supply chain and adapt a framework that derives from the literature and has relevance for the chosen company. 3. Design an alternative strategic supply chain design and its expected impact on financials, sustainability, resilience, supply chain performance metrics and network design at a strategic level.
Subjects	Subjects covered in this module include: ▪ Supply chain strategies ▪ Supply chain strategic framework ▪ Supply chain collaboration ▪ Supply chain network design ▪ Supply chain finance ▪ Supply chain sourcing ▪ Supply chain resilience ▪ Supply chain ethics and sustainable development goals
Literature	• Chopra, S. (2019) Supply Chain Management: *Strategy, Planning and Operation*. 7th edition, Global Edition. ISBN 9781292257891 • Nakano, M. (2020). *Supply chain management: strategy and organization*. Singapore: Springer Nature. • Peer reviewed articles related to the topics from publications with a high Scientific Journal Rank (SJR). • *Can be found via* https://www.buas.nl/library/library-metasearch.
Planning 1st semester	Week 5-11 & 13-17: masterclasses, based on Masterclass A and B format. Week 18: hand in individual paper.
Examination	Individual paper (100%) Formative assessment with planned feedback moments on the individual paper during masterclasses.
Module owner	R. van der Wegen (MA)
Professors	R. van der Wegen (MA) and M. Miranda-Ackerman (PhD) with guest professorships of Cranfield University (UK).

BSE1.LINC-1SCM	Leadership in an international context
Size	5 ECTS
Contribution to competencies	C. Create an approach for implementation of the supply chain improvement plan. D. Demonstrate leadership skills by influencing the improvement process.
Learning goal	The 'Leadership' module enables students to explore the challenges of leadership and to experiment with and acquire leadership skills in a simulated situation as a first step in their development as a supply chain leader.
Module parts	The module is structured in two parts: 1. Masterclasses based on the book *Leadership in Organizations* and peer reviewed articles focusing on existing theories on leadership, the complexity and challenges of leadership, related to leading teams and organizations in the supply chain. 2. Training programme focusing on team building, personal characteristics, communication styles and behaviour, and experimenting with supply chain leadership skills.
Objectives	At the end of this module the student is able to: 1. Explore and evaluate the influence and effects of leadership behaviour and communication in leading supply chain teams and organizations. 2. Act consciously, according to a personal development plan, to develop leadership skills and adjust this plan based on academic and professional insights, experiences, and reflection. 3. Distinguish different leadership concepts, leadership styles, types of leadership behaviour and the effectiveness in different situations and organizations linked as much as possible towards supply chain. 4. Analyse relationships between leadership behaviour, leadership traits and skills, decision making, power and influence tactics, and the implications they have on effective leadership. 5. Analyse the relationship between cultural values, leadership behaviour, diversity, and their relevance in a cross-cultural context.
Subjects	Subjects covered in this module include: ▪ The nature of supply chain leadership and leadership behaviour ▪ Leadership theories and concepts such as, and not limited to, adaptive leadership, charismatic leadership, transformational leadership, value-based leadership, ethical leadership, cross cultural leadership, diversity linked as much as possible towards supply chain. ▪ Methods to analyse leadership behaviour and leadership concepts ▪ Model for personality test and development (Lumina Learning) ▪ Model for personal branding, own qualities and points for development related to leadership
Literature	Yukl, G., & Gardner III, W. L. (2020). *Leadership in Organizations*, Pearson Education. ISBN 9781292314402 Approximately 5 peer reviewed articles will be included in the program, aiming at discussing the latest relevant developments. *Can be found via* https://www.buas.nl/library/library-metasearch. Lecturer will inform in class which articles will be studied.
Planning 1st semester	Week 5: Kick-off lecture Week 6 -11 & 13-17: Masterclasses B including discussions about the theory in the book, papers and cases linked as much as possible towards supply chain and a training focusing on personal development related to leadership. Week 12: Hand in Lumina training assignment Week 18: Hand in paper

Examination	Participation in Lumina training sessions and personal development plan (conditional with alphanumeric score) Individual paper assignment (100%). Formative assessments in Master classes (which is planned in week 14)
Module owner	E.D. van Diffelen (MSc, MBA)
Professors	E.D. van Diffelen (MSc, MBA) ; B.F. Groot (MA)

BSE1.RMSC-1SCM	Research Methods in supply chain management
Size	5 ECTS
Contribution to competencies	A. Analyse and evaluate supply chains from a strategic perspective. B. Develop a supply chain improvement plan that supports a sustainable business model. C. Create an approach for implementation of the supply chain improvement plan.
Learning goal	The 'Research Methods' module enables students to conduct research aimed at solving knowledge gaps in supply chain management situations. Students will take relevant supply chain management variables chosen by lecturers, formulate research questions, analyse existing questionnaire data on these variables using descriptive and inferential statistics, and report on findings including their practical and academic implications. Based on these implications they will formulate a second round of research questions, collect and analyse qualitative data, and report on findings including their practical and academic implications.
Objectives	At the end of this module the student is able to: 1. Formulate research questions based on a given business or consumer (related) problem and relevant variables (placed into a sustainable supply chain context). 2. Choose between experiment, case study, longitudinal, and cross-sectional research designs based on research questions and context. 3. Compose a critical literature review demonstrating synthesis and criticism of academic and professional sources while using an academically based referencing system. 4. Justify and apply the use of interviewing as a qualitative data collection method, including designing the interview item list and applying inductive thematic coding as a qualitative data analysis method. 5. Justify and apply the use of questionnaires as a quantitative data collection method including designing a quantitative self-response questionnaire based on existing literature. 6. Operate R via RStudio, including basics of opening, running, and saving script and data files and exporting data and graphs. 7. Produce and interpret appropriate descriptive measures of central tendency and dispersion, and linear models of bivariate relationships including relevant inferential and effect size statistics, for variables of all levels of measurement. 8. Justify the use of and report the results of qualitative and quantitative analysis using the appropriate combination of original text, quoting from interviews, and conceptual diagrams, written text, tables, and graphs to an academic audience, in English, at a publishable level of quality. 9. Argue for the contribution of research findings to present practical and academic knowledge. 10. Critically reflect on the choices made during the research process.
Subjects	Subjects covered in this module include: ▪ Research philosophy; ▪ Research questions; ▪ Research design; ▪ Literature review; ▪ Interviewing approach, methods, and practice; ▪ Questionnaire approach, methods, and practice; ▪ Inductive thematic coding;

	▪ R and R Studio; ▪ Data handling; ▪ Exploring and graphing data; ▪ Descriptive and inferential statistics; ▪ Writing a research report; ▪ Linking findings to literature and society; ▪ Quality criteria for research; ▪ Using research to address business and consumer problems.
Literature	Gray, D. E. (2022). *Doing research in the real world* (5. ed). Sage. ISBN 9781529742442 Articles (references provided through Brightspace)
Planning 1st semester	Week 5: Kick-off lecture Week 5-11 & 13-17: Masterclasses A & B Week 12 & 18: Hand in papers
Examination	Individual paper assignments: quantitative research (50%), and qualitative research (50%). Each examination component must be assessed with a minimum of 5.5 to pass the module. Formative assessment, especially in masterclasses B, peer feedback, individual consultations.
Module owner	O. Mitas (PhD)
Professors	O. Mitas (PhD) and A. Kokkinou (PhD)

BSE1.BISC-1SCM	Business Intelligence in supply chain management
Size	5 ECTS
Contribution to competencies	A. Analyze and evaluate supply chains from a strategic perspective. B. Develop a supply chain improvement plan that supports a sustainable business model.
Learning goal	The 'Business Intelligence' module enables students, as future leaders, to make faster and more informed decisions based on the available information. Business Intelligence is the collective name for processes of collecting and analyzing correct and reliable data, so that the right decisions can be made in complex supply chains. Attention is paid to the role of 'Business Intelligence' in relation to supply chain control and supply chain collaboration.
Module parts	The BI module is structured in two parts: ▪ Part I will expose the students to some of the main techniques employed in modern data science with an emphasis on the initial steps (data preparation and data exploration) and final steps (interpretation of the outcomes, and taking decisions on the basis of these outcomes) of the typical data science process. The middle steps of the process consist of intuitive understanding of the algorithms, their strengths and weaknesses, and potential uses. ▪ Part II will introduce data-analytic thinking, in the context of the strategic information needs of managers of organizations across the supply chain. . This part will also zoom in on related new developments.
Objectives	At the end of the 1st part of the module the student is able to: o Evaluate the obtained information from key analytical techniques, using the main assessment models. o Interpret the information stemming from selected key analytical techniques and use this information for making informed decisions and recommendations. o Evaluate the impact of new developments in business intelligence on the management of supply chains. At the end of the 2nd part of the module the student is able to: o Apply the principles of enterprise data management, and the relationship between strategic management and business intelligence. o Apply the main models for data architectures and the key terms related to these models. o Apply the principles of data management and the importance of governance aspects of data in supply chain management.
Subjects	Subjects covered in this module include: ▪ Definition and understanding of business intelligence (functions; roles; deliverables; and metrics) ▪ Enterprise data management ▪ Definitions of big data and smart data ▪ Big data analytics ▪ Blockchain ▪ Predictive analysis ▪ Managerial aspects of business intelligence and business analytics (strategy; tools; applications; and models) ▪ Recent developments in the field of business intelligence, big data and smart services ▪ The information needed to support the mission and strategy of an organization and a supply chain design

	▪ Internal and external data sources needed to be able to produce the requested information ▪ The application of business analysis techniques and methods ▪ Laws and agreements regarding privacy and confidentiality ▪ Problems regarding reliability, security and privacy
Literature	Jaggia, Sanjiv, Alison Kelly, and Kevin Lertwachara. 2025. *Business Analytics*. Third Edition. New York: McGraw-Hill Education. ISBN 9781264901531 Articles (both academic and non-academic) *NOTE: for sources like Harvard Business Review you can make an account and read a few free articles per month.*
Planning 1st semester	Week 5 Kick-off lecture Week 5-11 & 13-17: Masterclasses, including R-trainings with an assignment Week 12: Hand in assignment portfolio R-trainings Week 19: Written exam
Examination	Written exam (75%) Portfolio of Data Analytics Projects Using R (25%) Formative assessment, especially in Masterclasses B (training exam questions and cases).
Module owner	A. Kokkinou (PhD)
Professors	A. Kokkinou (PhD) with P. de Hoon (MSc) & guest lecturers

BSE1.CISM-1SCM	Change & Innovation in supply chain management
Size	5 ECTS
Contribution to competencies	B. Develop a supply chain improvement plan that supports a sustainable business model. C. Create an approach for implementation of the supply chain improvement plan. D. Demonstrate leadership skills by influencing the improvement process.
Learning goal	The Change & Innovation (C&I) module enables students to explore the multiple perspectives of C&I processes in general, and in supply chains in specific, at the individual, team, and organization level. By combining theory on C&I with practical cases, students develop the ability to develop, plan, lead and implement C&I processes successfully.
Objectives	At the end of this module the student can: 1. Design a change management strategy and improvement plan based on a well-defined business problem by applying innovation management models and methods 2. Compare and evaluate change management models and methods to formulate an implementation plan for a supply chain strategic innovation 3. Select a leadership approach to lead teams, and supervise and control the supply chain innovation implementation
Subjects	Subjects covered in this module include: • Individual, team and organization behaviour and cultural awareness • International supply chain innovation and trends • Main schools of change & innovation management • Cases of international intercultural approaches to supply chain change. • Innovation and organizational structures • Planned and emergent change in turbulent regional and global context • Leadership and challenges in the change process • Organisational and cross culture issues and its impact on C & I • Change implementation and control planning
Literature	Cameron, E., Green, M. (2019) *Making Sense of Change Management. A Complete Guide to the Models, Tools and Techniques of Organizational Change.* Kogan Page Ltd. ISBN 9781398612853 Peer reviewed articles with a high Scientific Journal Rank (SJR) will be included in the programme aiming at discussing the latest relevant developments. *Can be found via* https://www.buas.nl/library/library-metasearch.
Planning 1st semester	Week 4: Kick-off lecture Week 5-11 & 13-17: Masterclasses A&B Week 16: Hand in group assignment paper Week 19: Oral exam
Examination	Oral exam (60%)* and group assessment (40%) – Each examination component must be assessed with a minimum of 5.5 to pass the module*. – Formative assessment with planned feedback moments on the paper will take place during masterclasses. – Formative assessment with feedback moment on the oral exam will take through an mock oral assessment during a masterclass. ** The group report forms the basis for the oral exam. If you miss the opportunity to hand it in (1st opportunity) or do not reach at least a 4.5 mark, you are not invited for the oral exam. The oral exam will then be graded with a 'Missed Opportunity.*

Module owner	M. Miranda-Ackerman (PhD)
Professors	M. Miranda-Ackerman (PhD) and J. van Kelle (MSc) with J. Roevens (PhD) and D. Dermout (MSc)

BSE1.ISCC-1SCM	Integrated Supply Chain Cases
Size	6 ECTS
Contribution to competencies	A. Analyse and evaluate supply chains from a strategic perspective. B. Develop a supply chain improvement plan that supports a sustainable business model. C. Create an approach for implementation of the supply chain improvement plan. D. Demonstrate leadership skills by influencing the improvement process.
Learning goal	The Integrated Supply Chain Cases module enables students to make efficient and effective decisions in supply chains through mathematical programming (and network analysis) and by integrating knowledge and skills from five perspectives (Strategy, Business Intelligence, Change & Innovation, Leadership, International) in a real-life environment.
Module parts	The module Integrated Supply Chain Cases is structured in two parts: ▪ Part I: Modelling (Model Building) ▪ Part II: Integrated Cases (Contextual Company Analysis)
Objectives	At the end of this module the student is able to: Part I: 1. Model complex supply chain problems in a mathematical format. 2. Solve network problems with exact algorithms or heuristics and appropriate software. Part II: 3. Explore problems in a real-life case about a supply chain from an interdisciplinary perspective. 4. Analyze and identify opportunities in a complex supply chain environment and cope with ambiguities.
Subjects	Subjects covered in this module include: Part I: Mathematical programming (LP, MIP) and network problems (e.g.: VRP) Part II: Business environment, macro and industry trends, market dynamics, supply chain capabilities and company maturity, strategic improvement and research opportunities identification.
Literature	Part I: Scientific articles related to network analysis. *Can be found via* https://www.buas.nl/library/library-metasearch Papers on software tools like Excel Solver, Open Solver and VRP Spreadsheet Solver Part II (Integrated Cases): Paper: Peer reviewed articles from publications with a high Scientific Journal Rank (SJR). *Accessible via:* https://www.buas.nl/library/logistics/library-logistics-databases
Planning 2nd semester	Week 20: Contextual Company Analysis: Masterclass, Guest lecture(s) Model Building A. Week 21: Contextual Company Analysis: Masterclass, Learning Community Model Building A Week 22: Contextual Company Analysis: Masterclass Hand-in Model Building A /Model Building B Week 23: Contextual Company Analysis: Masterclass, Feedback Model Building B. Hand in assignment paper Contextual Company Analysis and Model Building B.

Examination	For both parts, an individual paper must be presented. Each part counts for 50% of the module Integrated Supply Chain Cases. Each component (part) should be assessed with min. 5.5 to pass the module. Formative assessment: Masterclasses B, feedback sessions.
Module owners	Part I: A Gijsberts Part II: M.A. Miranda Ackerman
Professors	A. Gijsberts (MSc) and M.A. Miranda Ackerman (PhD) with J.W. Proper (PhD), A. Mandemakers (PhD candidate), A. Kokkinou (PhD) and R. van der Wegen (MA) with guest lecture(s) from industry.

BSE1.REPR-1SCM	Research Proposal
Size	6 ECTS
Contribution to competencies	A. Analyse and evaluate supply chains from a strategic perspective. B. Develop a supply chain improvement plan that supports a sustainable business model.
Learning goal	The 'Research Proposal' module enables students to write a well-founded research proposal for their thesis topic and graduation placement by building on the preliminary research conducted in during ISSC.
Module parts	The module is the follow up course to ISCC.
Objectives	At the end of this part of the module the student is able to: 1. Explain the business problem that the company is facing and formulate a clear objective by using (and if necessary refining) the preliminary analysis conducted during ISSC. 2. Critically review literature on the focal topic, demonstrating synthesis and criticism of academic and professional sources while using an academically based referencing system in a way that supports the thesis objective 3. Compare and contrast the analysis of the company's context conducted during ISSC to the literature and use it to formulate relevant research questions. 4. Argue for, and apply the appropriate research design (experiment, case study, longitudinal, cross-sectional research designs and supply chain research models) based on the research questions and professional context. 5. Anticipate on the issues and choices that will need to be made during the research process and reflect on how they influence the quality of the research for decision-making.
Subjects	Subjects covered in this module include conducting research in a professional supply chain context: Formulating a research proposal (introduction, literature review, contextual company analysis, empirical research design, reflection) that supports the achievement of a business objective and taking into consideration the business context.
Literature	Literature and resources used in the first semester remain relevant. Other relevant excerpts & references to study books will be provided.
Planning 2nd semester	Week 24-27: Graduation Placement Week 24 & 25: Kick-off lecture and lectures about designing a Research Proposal Week 25-27: Online Q&A and individual supervision. Week 27: hand in Research Proposal.
Examination	Individual paper/ Research Proposal (100%) Formative assessment: masterclasses B, individual supervision and graduation table
Module owner	A. Kokkinou (PhD)
Professors	A. Kokkinou (PhD), A. Mandemakers (PhD candidate), J.W. Proper (PhD) & M. Miranda-Ackerman (PhD)

BSE1.THES-1SCM	Thesis
Size	18 ECTS
Contribution to competencies	A. Analyse and evaluate supply chains from a strategic perspective. B. Develop a supply chain improvement plan that supports a sustainable business model. C. Create an approach for implementation of the supply chain improvement plan. D. Demonstrate leadership skills by influencing the improvement process.
Learning goal	The thesis contributes to the competencies A, B, C and D and has the following learning goal: Students bring about a supply chain improvement plan and -process in a professional context and thereby demonstrate professional communication and leadership skills.
Module parts	The different modules of the curriculum all contribute to the mastery of the competencies. The thesis period concludes the master's programme and assesses the end level of the student for the master's programme. At the end of the first semester (by the end of week 17) students need to hand in the final draft of the thesis topic and graduation placement. The thesis coordinators need to approve the handed in topics and placements. The course Integrated Supply Chain Cases bridges towards the uncontrolled complex characteristics of a professional environment at the graduation company. After handing in the Research Proposal, students start with the thesis period. Students will continue their path in the professional environment and will be challenged to demonstrate the acquired competencies.
Objectives	1. To deliver a thesis report that contains a description of a research conducted, based on the thesis topic. 2. This implies to deliver a supply chain analysis and a design. The design includes an improvement plan and an implementation approach of the supply chain. 3. It is required (to a certain extent) to realize the first steps of the implementation process towards an improved and/or innovated supply chain and to demonstrate leadership skills.
Subjects	Subjects covered in this module include: ▪ Thesis topics that refer to the different functionalities of the supply chain. These functionalities are analysed and evaluated in a supply chain context (in relation to suppliers and customers) at a strategical level. ▪ Supply chain analysis and design including an improvement plan and an implementation plan of the supply chain. ▪ The first steps of the implementation process towards an improved and/or innovated supply chain.
Literature	No prescribed literature. Relevant excerpts & references to study books will be provided during supervision and graduation tables.
Planning 1st semester	Week 28 - 39: @Graduation Placement (five days per week); @BUas for supervision purposes. The thesis period is individually supervised by both a University lecturer and a company advisor. During the thesis period graduation tables (learning community) and individual supervision are organized at BUas. The graduation tables enable students to give feedback, to benchmark their findings, and to learn from peers, lecturers, researchers and professionals. Week 38: hand in Thesis & Leadership report Week 39: Presentation & Defense

Examination	Individual thesis and leadership report, presentation and defense (100%) Assignment based on Learning community theme products including participation needs to be assessed as sufficient (alphanumeric assessment) as a precondition for participating in the examination. Formative assessment: Graduation tables and individual supervision
Module owner	A. Mandemakers (PhD candidate)
Professors	A. Mandemakers (PhD candidate) and A. Kokkinou (PhD)

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