CONSTRUCTOR UNIVERSITY

Study Program Handbook

Master of Business Administration

MBA PROGRAM-120

Study Program Name	Master of Business Administration
Program Abbreviation	MBA 120
Program ID	2025-F-MBA
Program Degree	Master of Business Administration (MBA)
Total ECTS	120
Number of Semesters	4
Study Mode	On-Campus / Online / Blended
Entry Qualification Degree	Bachelor's degree (minimum 180 ECTS) with one year of sector experience
Entry Qualification Area_1	Business, Management, Economics, Social Sciences & Humanities
Entry Qualification Area_2	Engineering & Technology
Entry Qualification Area_3	Natural & Life Sciences
School Affiliation	School of Business, Social & Decision Sciences
Study Program Chair	NN

Version No	Valid as of	Approved	Body
			Academic Senate
			Accreditation Council

Contents

1 Overview

1.1 Context

In the rapidly evolving environment characterized by digital transformation, global interconnectedness, and sustainability challenges, organizations require leaders who can navigate complexity by employing a data-informed and interdisciplinary strategy and who can inspire and guide creative minds by adaptive leadership styles.

The MBA program at Constructor University equips professionals to effectively address real-world business challenges through sophisticated analytical tools, evidence-based management practices, and interdisciplinary problem-solving strategies. Its distinctive structure integrates entrepreneurship, digital transformation, and sustainability with fundamental management disciplines, preparing graduates to lead in an evolving landscape.

A key characteristic of contemporary business leadership is effectively utilizing data for strategic decision-making across various domains, including positioning, forecasting, operational efficiency, and consumer behavior analysis in disruptive markets. Modern executives must grasp how emerging technologies like artificial intelligence, blockchain, and machine learning influence business models and industries. Students cultivate the essential technical and strategic skills necessary for leadership positions in corporate, entrepreneurial, and public sector settings by engaging in practical capstone projects, building industry partnerships, and accessing Constructor's advanced innovation ecosystem.

The Constructor University MBA develops leaders proficient in business fundamentals and able to merge technological, economic, and social perspectives to promote sustainable and ethical growth. The program's interdisciplinary approach and experiential learning model prepare graduates to excel in complex global markets and contribute significantly to their fields.

1.2 Program Concept

The Constructor University MBA Program prepares graduates to lead in dynamic, global markets where data-driven insights, entrepreneurship, and strategic decision-making are key drivers of success. MBA Students engage in applied learning experiences from the first semester, including industry collaborations, capstone projects, and learning from leaders. The MBA program is a two-year, full-time degree that integrates academic depth with practical relevance. It emphasizes two specialization areas of data analytics and supply chain management, within the following development areas:

- Leadership and Strategy Area
- Innovation, Entrepreneurship, and Start-up Area
- Networking and Communication
- Specialization areas in Business Analytics or Supply Chain Management

Students develop leadership and analytical skills through applied learning, capstone projects, and thesis research, engage in real-world challenges, and benefit from Constructor's innovation ecosystem. The program fosters a holistic, impact-driven leadership mindset, blending quantitative analysis, sustainability strategies, and global business perspectives. With a strong focus on practical innovation implementations, students develop advanced competencies in digital business models, AI- enhanced analytics, and data-driven decision-making. The MBA leverages the Constructor Ecosystem, providing opportunities for students to engage with industry leaders, participate in entrepreneurship initiatives, and showcase their innovations in demo days and strategic challenges. By integrating emerging

business technologies with hands-on leadership development, the program ensures that graduates stand out in competitive job markets. Whether advancing in corporate leadership, driving digital transformation, or launching new ventures as data-driven innovative entrepreneurs, Constructor University MBA alumni will be prepared to lead in a world where business success is defined by innovation, sustainability, and strategic agility.

1.3 Target Audience

The MBA program is designed for students from diverse backgrounds and experiences who hold a bachelor's degree in various fields and are fluent in English. It targets individuals looking to advance into executive roles, become corporate leaders, or drive innovation within organizations, including professionals pursuing specializations and data-driven strategic decision-making. Candidates should possess a passion for international business and a commitment to creating value for their organizations while considering social impacts.

Program Duration and ECTS Credit Requirements: MBA Program is four semesters with 120 ECTS credits.

- Educational Background: Applicants must possess a bachelor's degree from any field. The ideal candidates are those who aspire to become technological or social entrepreneurs with a vision to create impactful innovations or those aiming to become top managers who will drive the future of business innovation.
- Work Experience: Applicants must have at least one year of full-time industry experience after obtaining their bachelor's degree. This experience should ideally demonstrate managerial responsibilities or entrepreneurial initiatives. Proof of business ownership is required for applicants who have launched their ventures.
- Future Leaders and Managers: This program is ideal for those aiming to assume senior roles in strategic management, marketing, or supply chain leadership, particularly where an understanding of analytics and sustainable practices is valued.
- Aspiring Entrepreneurs and Innovators: Suitable for individuals looking to launch or grow their businesses, especially in technology or sustainability-focused sectors.
- Professionals Seeking Specialization: This program benefits those looking to deepen their expertise in supply chain management or data driven business analytics .
- Data-Driven Decision Makers: Especially relevant for professionals who intend to use data analytics and business intelligence to drive business decisions and innovations.

Furthermore, the program aims to attract professionals from diverse cultural and geographical backgrounds to build a robust international network that enhances their careers and businesses.

1.4 Qualification Aims

The MBA program at Constructor University aims to develop dynamic and innovative leaders capable of bridging interdisciplinary knowledge and practical expertise to tackle complex global challenges. The program fosters an entrepreneurial mindset, equipping students with the skills to innovate, lead transformative initiatives, and drive sustainable impact in diverse industries. Emphasizing an interdisciplinary and practice-oriented approach, the program integrates entrepreneurship, innovation and start-up, strategic leadership, networking and communication and a specialization area. Students will develop expertise in digital transformation, and entrepreneurial leadership, empowering them to navigate modern business landscapes with agility and strategic foresight.

Practical application lies at the heart of the learning experience. Students will apply theory through real-world business cases, simulations, and industry partnerships, acquiring hands-on experience in strategic decision-making and innovation development. The program encourages transformational and innovation skills, providing students with essential tools and mentorship to support change and transformation in a digital world. Effective communication and leadership in a global business setting are vital skills honed throughout the curriculum. Students will enhance their abilities to present data-driven insights, develop persuasive business narratives, and engage with diverse stakeholders within and across organizations. Graduating students will become responsible, ethical decision-makers, ready to lead high-impact organizations with resilience and adaptability. Graduates will:

- Lead ethically in dynamic and agile environments
- Solve business challenges using data and interdisciplinary frameworks
- Integrate innovation, and digital transformation into business strategy
- Be prepared for executive and, entrepreneurial careers

By the end of the program, graduates will excel in global business environments, leveraging innovation, digital strategies, and interdisciplinary expertise to create long-term value and drive meaningful change in their business sector.

1.5 Intended Learning Outcomes

By the end of this program, students will be able to:

No	Competence	ILO Study Program	Bloom's Taxonomy Level (BT)
1	Analyze, Evaluate, & Create	Analyze and synthesize complex global business and societal challenges by applying interdisciplinary frameworks, theories, and research methods to propose sustainable and scalable solutions	BT-4 & BT-6
2	Apply & Evaluate	Lead and transform organizations by fostering high-performing teams, managing change, and navigating uncertainty with agility and resilience	BT-3 & BT-5
3	Create	Design and implement innovative business models by integrating data analytics, AI, and sustainability into strategic and operational planning.	BT-6
4	Evaluate	Evaluate financial data, KPIs, and market intelligence to support strategic decision-making and enhance organizational competitiveness.	BT-5
5	Apply & Create	Integrate ethical reasoning, sustainability, and global perspectives into business leadership, ensuring responsible and inclusive decision-making.	BT-3 & BT-6
6	Analyze & Evaluate	Analyze market dynamics, customer behaviors, and emerging trends to develop forward-thinking global marketing strategies.	BT-4 & BT-5
7	Create	Plan and lead digital transformation initiatives, leveraging data, emerging technologies, and change-management strategies to improve organizational performance.	BT-6
8	Evaluate	Communicate complex business analyses and strategic recommendations effectively to diverse audiences using persuasive, data-driven storytelling.	BT-5

9	Evaluate, & Create	Demonstrate leadership in interdisciplinary, multicultural environments by applying governance principles, social responsibility, and strategic foresight.	BT-5 & BT-6
10	Create	Conduct, present, and defend an applied master's thesis based on original research, laying the foundation for doctoral studies or professional publication.	BT-6

1.6 Career Perspectives

The Constructor University MBA study program prepares graduates to become strategic and ethical leaders equipped with interdisciplinary expertise to tackle global challenges. With a strong foundation in strategic leadership, data-driven decision-making, entrepreneurship and innovation, graduates will be well-prepared to manage diverse teams and solve complex business problems. Whether driving transformation in established organizations or launching entrepreneurial ventures, CU MBA graduates will bring a global perspective and a commitment to responsible business practices into their careers.

Graduates of the program will assume leadership roles across various industries, including consulting, technology, supply chain management, and sustainability-focused sectors. The combination of advanced business knowledge, strategic thinking, and hands-on experience in real-world projects ensures that they are well-positioned to integrate into high-impact roles in multinational corporations, fast-growing startups, and global organizations.

The program also provides a strong foundation for graduates interested in entrepreneurship. Through accelerator projects and enterprise engagement, students develop the skills to design and launch innovative ventures or act as intrapreneurs within companies, driving digital transformation and business growth. Many graduates will leverage their interdisciplinary training to establish startups in technology, sustainability, and global business innovation.

For those who seek to pursue further academic research, the MBA program offers a pathway into PhD programs at Constructor University (CU) or other leading institutions. With its emphasis on research-driven education, strategic management, and business analytics, the program prepares graduates for advanced studies in fields such as business, economics, and sustainability, contributing to academic knowledge and industry innovation.

The diverse skill set, global outlook, and problem-solving capabilities that CU MBA graduates develop will also make them highly sought after in consulting, policy-making, administration, and leadership roles within government agencies and international organizations. In an increasingly complex and technology-driven world, the ability to navigate digital transformation, sustainability challenges, and business strategy is a highly valued competency across industries.

1.6.1 Career Services Center

The Career Services Center supports students in their career development by offering high-quality training, coaching, and networking opportunities. This includes support with CV writing, cover letters, interview preparation, presentations, business etiquette, employer research, and connections with companies. We also host events like the Career Fair, helping students expand their professional networks. The center's goal is to guide students toward rewarding careers after graduating from Constructor University. Additionally, the center helps students and graduates build a lasting global network through the strong alumni community, essential for exploring opportunities in academia, industry, and beyond. For more information, please contact the Career Service Center (https://constructor.university/student-life/career-services) .

2 Regulations

2.1 Graduation Requirements

In order to graduate, students need to obtain **120** ECTS (credit points). In addition, students must complete all the program's mandatory elective components as indicated in the Curriculum of this handbook.

2.2 Program Degree

Upon successful completion of the study program, students are awarded a: **Master of Business Administration (MBA)**.

2.3 Quality Assurance

The program's quality assurance commits to continuous improvement of the MBA Program through student and alumni feedback, faculty roundtables and evaluations, and capstone and thesis supervision reflections. Therefore, close contact and cooperation between program representatives and students are crucial. Therefore, regular Roundtables are held to continuously evaluate the program, its modules and workshops, supervision, and opportunities. In doing so, the Study Program Chair and involved faculty gain essential insights into students' experiences, demands, and overall impressions of the program. Students are asked to perform module component evaluations on the module component level to ensure that the modules are high-quality and that lecturers can make any necessary changes.

The Study Program Chair intensively uses this feedback, as well as feedback from projects, research, and thesis tutors, to improve the learning environment and tools, the program's offering, and its progress. The current program was shaped through input from previous experiences and discussions with diverse stakeholders, including students and industry practitioners.

2.4 Scope of Regulations

The regulations in this handbook are valid for all students who entered the **Master of Business Administration (MBA)** program at Constructor University in Spring 2026. In case of conflict between the regulations in this handbook and the general policies for Master Studies, the latter apply (see Academic policies | Constructor University).

In exceptional cases, certain necessary deviations from the regulations of this study handbook might occur during the course of study (e.g., change of the semester sequence, assessment type, or the teaching mode of courses).

Updates to Study Program Handbooks are based on the policies approved by the Academic Senate on substantial and nonsubstantial changes to study programs. Students are integrated in the decision-making process through their respective committee representatives. All students affected by the changes will be properly informed.

In general, Constructor University therefore reserves the right to change or modify the regulations of the program handbook also after its publication at any time and in its sole discretion.

2.5 Program Admission

Studying at Constructor University takes place in a highly intercultural environment. Therefore, it is necessary to be willing to join such a multicultural international community and work with students and faculty across various fields of interest.

Admission to Constructor University is selective and based on a candidate's university achievements, recommendations, and self-presentation. Students admitted to Constructor University demonstrate exceptional academic achievements, intellectual creativity, and the desire and motivation to make a difference.

2.5.1 Entry Qualification

The Master of Business Administration (MBA) program requires students to have a minimum qualification level of a bachelor's degree and at least one year of working experience.

2.5.2 Language Proficiency

English Language proficiency test from TOEFL, IELTS, or Duolingo with a minimum score of: 90 TOEFL; 6.5 IELTS; 110 Duolingo English Test

2.5.3 Motivation Statement

Applicants need to prove a strong interest in the contents of the MBA program in a motivation letter. Social commitment, as well as extracurricular and voluntary activities, e.g., university service, clubs, varsity, social work, entrepreneurship center, accelerator programs, etc., will be considered.

2.5.4 Letter of Recommendation (optional)

Applicants are supposed to possess elevated analytical, problem-solving, and verbal communication skills, which are to be substantiated in the recommendation letters.

2.5.5 Disclaimer

Formal admission requirements are subject to higher education law and are outlined in the Admission and Enrollment Policy of Constructor University: Academic policies | Constructor University.

2.6 Program Application

The application process is described on the program website: **Program Link**| Constructor University

As outlined there, the following documents need to be uploaded via the application portal:

1. Degree certificate or equivalent
2. Proof of English Language Proficiency
3. Motivation Statement
4. Letter of Recommendation (optional)
5. Proof of ECTS earned e.g. transcripts

6. Curriculum vitae (CV)
7. Proof of Identity

2.7 Program Contact

For more information on the study program please contact the Study Program Chair:

N.N.

Email: xx@constructor.university

or visit our program website: MBA| Constructor University

For more information on Student Services please visit:
https://constructor.university/student-life/student-services

3 Curriculum

3.1 Curriculum at a Glance

The MBA curriculum is divided into four semesters and takes two years to complete. It is grouped into the following areas: **Innovation and Entrepreneurship Area, Leadership and Strategy Area, MBA Specialization Area, Networking and Communication Area,** leading to a **Master Thesis**.

3.2 Curriculum Areas

Curriculum Area 1	Module	Status	Semester of Study	ECTS
INNOVATION AND ENTREPRENEURSHIP	Entrepreneurship and Innovation Management	mandatory	1	5
INNOVATION AND ENTREPRENEURSHIP	Accelerator Project I	mandatory	1	10
INNOVATION AND ENTREPRENEURSHIP	Applied Project Management	mandatory	2	5
INNOVATION AND ENTREPRENEURSHIP	Accelerator Project II	mandatory	2	10
INNOVATION AND ENTREPRENEURSHIP	Digital Transformation and Innovation	mandatory	3	5
INNOVATION AND ENTREPRENEURSHIP	Accelerator Project III	mandatory	3	10
Requirement				**45 ECTS**

Curriculum Area 2	Module	Status	Semester of Study	ECTS
LEADERSHIP AND STRATEGY	Agile Leadership and Strategic Management	mandatory	1	2.5
LEADERSHIP AND STRATEGY	Customer-centric Mindset & Agile Delivery Management	mandatory	1	2.5
LEADERSHIP AND STRATEGY	Digital Business Models and Functions	mandatory	2	5
LEADERSHIP AND STRATEGY	Transformational Change Management	mandatory	3	5
Requirement				**15 ECTS**

Curriculum Area 3	Module	Status	Semester of Study	ECTS
MBA SPECIALIZATION	Big Data Challenge	Mandatory elective	1	5

MBA SPECIALIZATION	Data Analytics	Mandatory elective	1	5
MBA SPECIALIZATION	Data Mining	Mandatory elective	2	5
MBA SPECIALIZATION	Machine Learning	Mandatory elective	2	5
MBA SPECIALIZATION	Visual Communication and Data Story Telling	Mandatory elective	2	5
MBA SPECIALIZATION	Text Analysis and Natural Language Processing	Mandatory elective	2	5
MBA SPECIALIZATION	Business Intelligence	Mandatory elective	1	5
MBA SPECIALIZATION	Supply Chain Management and Logistics	Mandatory elective	1	5
MBA SPECIALIZATION	Sustainable Cities and Transportation	Mandatory elective	3	5
MBA SPECIALIZATION	Advanced Supply Chain Management	Mandatory elective	2	5
MBA SPECIALIZATION	Purchasing and Distribution	Mandatory elective	2	5
MBA SPECIALIZATION	Data Analytics in Supply Chain Management	Mandatory elective	3	5
Requirement				**15 ECTS**

Curriculum Area 4	**Module**	**Status**	**Semester of Study**	**ECTS**
NETWORKING AND COMMUNICATION	Leadership Communication	mandatory	1	5
NETWORKING AND COMMUNICATION	Enterprise engagement	mandatory	2	5
NETWORKING AND COMMUNICATION	MBA Research Colloquium	mandatory	3	5
Requirement				**15 ECTS**

Curriculum Area 5	**Module**	**Status**	**Semester of Study**	**ECTS**
THESIS	MBA Thesis	mandatory	4	30
Requirement				**30 ECTS**

3.3 Study Scheme MBA, 120 ECTS

<table>
<tr><td>4th semester</td><td colspan="5">MBA Thesis (30 ECTS)
Incl. Thesis Seminar</td></tr>
<tr><td>3rd semester</td><td>Digital Transformation and Innovation (5 CP)</td><td>Accelerator Project III
Pitch-Deck Project
(10 CP)</td><td>Transformational Change Management
(5 CP)</td><td>MBA Specialization
(5 ECTS)</td><td colspan="2">MBA Research Colloquium
(5 CP)</td></tr>
<tr><td>2nd Semester</td><td>Applied Project Management
(5 CP)</td><td>Accelerator Project II
Business Modelling Project
(10 CP)</td><td>Digital Business Models and Functions
(5 CP)</td><td>MBA Specialization
(5 ECTS)</td><td colspan="2">Enterprise Engagement
Organizational Visits & Cases
(2.5 CP)
Organisational Behaviour (2.5 CP)</td></tr>
<tr><td>1st semester</td><td>Entrepreneurship and Innovation Management
(5 CP new)</td><td>Accelerator Project I
Starting-up project
(10 CP)</td><td>Customer-centric Mindset & Agile Delivery Management (2.5 CP)
Agile Leadership and Strategic Management
(2.5 CP)</td><td>MBA Specialization
(5 ECTS)</td><td colspan="2">Leadership Communication
Learning from Leaders
(2.5 CP)
Communication & Presentation Skills for Executives (2.5 CP)</td></tr>
<tr><td>AREAS</td><td colspan="2">Innovation and Entrepreneurship</td><td>Leadership & Strategy</td><td>MBA Specialization Area</td><td colspan="2">Networking & Communication Area</td></tr>
</table>

4 Modules

4.1 Innovation, Entrepreneurship & Start-up Area

4.1.1 Entrepreneurship and Innovation Management

Module Name	**Entrepreneurship and Innovation Management**
Module Code	2025-MBA-501
Module ECTS	5
Study Semester	Mandatory: 2025-MBA-120-MA 1; 2025-MBA-60-MA 1 Mandatory Elective:
Program Affiliation	2025-MBA-120-MA
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Lecture	35
Independent Study	90
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Entrepreneurship and Innovation Management	MBA-501	Lectures	5

4.1.1.1 Module Description

This course will equip students with entrepreneurship and innovation management theory and practice. Therefore, to make decisions throughout managing an innovation strategically, students who successfully complete this course will be able to analyze the innovation types and their effect size in the markets.

The module assessment will include one midterm exam, two presentations, and a final assignment. In the first session, students will learn which topics to cover in their presentations, midterm, and final assignments.

4.1.1.2 Intended Learning Outcomes

No	**Competence**	**ILO**
1	Analyze	Analyze markets to generate new ideas, raise funds, and manage intellectual capital for successful entrepreneurship and innovation.

2	Develop	Develop strategies to foster innovative work behavior in established organizations
3	Utilize	Utilize open innovation systems to support new ventures and new product development (NPD)
4	Manage	Manage social capital to create and sustain entrepreneurial networks.
5	Demonstrate	Demonstrate a positive mindset toward entrepreneurship and innovation
6	Collaborate	Collaborate effectively within teams to pursue entrepreneurial goals.
7	Construct	Construct logical arguments to communicate entrepreneurial strategies and innovation cases
8	Produce	Produce clear, structured written materials that reflect entrepreneurial thinking and innovation planning.

4.1.1.3 Indicative Literature

- Selected readings will be distributed during classes, and the recommended readings above are available from the online databases and university library.

- ENOVA Book is the supplementary source for the course:

4.1.1.4 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.1.1.5 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Entrepreneurship and Innovation Management	Portfolio Assessment: - Midterm Assignment (30%, desk-research, written) Presentation I (10%, 30 minutes, team or individual) Presentation II (10%, 10 minutes, team or individual) Final Assignment (50%, take-home paper, individual)		100	45%	All

4.1.2 Accelerator Project I: Starting-up Project

Module Name	**Accelerator Project I: Starting-up Project**
Module Code	2025-MBA-511
Module ECTS	10
Study Semester	Mandatory: 2025-MBA-120-MA 1 Mandatory Elective:
Program Affiliation	2025-MBA-120-MA
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Project	120 h
Research and private study	100 h
Project coaching lectures and workshops	30 h
Hours Total	250

Module Components	**Number**	**Type**	**CP**
Accelerator Project I: Starting-up Project	MBA-511	Project	10

4.1.2.1 Module Description

This module is the first in a three-part Accelerator Capstone series focused on transforming an opportunity or challenge into a clearly framed entrepreneurial or intrapreneurial project. Students identify a meaningful problem and begin developing a solution concept with real-world value, applicable either as a new venture or innovation within an existing organization.

They will gain hands-on experience with ideation, early validation, and stakeholder engagement while receiving coaching and feedback. The aim is to build the mindset, analytical skills, and initiative needed to advance innovation under uncertainty, whether in startups or corporate contexts.

The module assessment will consist of a single graded presentation at the end of the project period. During the first contact session, students will receive guidance on the expected work plan, including desk and field research activities. A second session will be held for progress reporting and formative feedback. The final (third) session will be dedicated to the assessed presentation, where students present their completed project work (30 minutes). This final presentation constitutes the sole graded component of the module.

4.1.2.2 Usability and Relationship to other Modules

This capstone module sets the foundation for Accelerator Project II and III, and draws from concepts learned in entrepreneurship, strategy, and innovation modules. It complements the Organizational Visits & Cases module by

encouraging real-world exploration and reflection. Because projects can be entrepreneurial (startups) or intrapreneurial (within organizations), students apply their learning flexibly, shaped by their background, interests, and career goals.

4.1.2.3 Recommended Knowledge

Students should begin by exploring and identifying a real-world problem or opportunity they are passionate about addressing. This may be drawn from industry experience, organizational pain points, or societal challenges. A basic familiarity with ideation tools, such as the Business Model Canvas, is also recommended to support initial framing and exploration.

4.1.2.4 Intended Learning Outcomes

No	Competence	ILO
1	Identify	Identify and articulate a relevant business challenge or opportunity with innovation potential.
2	Frame	Frame a compelling early-stage solution using tools like the Business Model Canvas.
3	Apply	Apply methods for early customer validation and incorporate feedback to refine the concept.
4	Develop	Develop a lean project roadmap and professionally communicate initial insights to stakeholders.
5	Reflect	Reflect on team dynamics and the entrepreneurial/intrapreneurial process to improve project design and execution.

4.1.2.5 Indicative Literature

- Osterwalder, A. & Pigneur, Y. (2010). Business Model Generation. Wiley.
- Gifford, C. (2018). Intrapreneurship Handbook: A Practical Guide for Corporate Innovators.

4.1.2.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.1.2.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Accelerator Project I: Starting-up Project	Presentations	30 minutes	100	45%	All

4.1.3 Accelerator Project II: Business Modelling Project

Module Name	**Accelerator Project II: Business Modelling Project**
Module Code	2025-MBA-512
Module ECTS	10
Study Semester	Mandatory: 2025-MBA-120-MA 2 Mandatory Elective:
Program Affiliation	2025-MBA-120-MA
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Project	120 h
Research and private study	100 h
Project coaching lectures and workshops	30 h
Hours Total	250

Module Components	**Number**	**Type**	**CP**
Accelerator Project II: Business Modelling Project	MBA-512	Project	10

4.1.3.1 Module Description

This second module in the three-part Accelerator Capstone series focuses on transforming a validated idea into a robust and testable business model. Students will develop and refine key elements such as customer segments, channels, revenue models, cost structures, and key partnerships, applying frameworks like the Business Model Canvas and Value Proposition Canvas

The project may be entrepreneurial or intrapreneurial, depending on the student's context. Structured coaching, workshops for peer exchange, and iterative feedback will guide students as they run field validations, assess feasibility, and align their solutions with market or organizational fit. The aim is to develop strategic modeling skills and prepare students for advanced testing and communication of their business ideas in Project III.

The module includes three structured checkpoints to monitor business model development and strategic refinement progress. In the first session, students will be guided through the expected analytical tools, market research steps, and strategic components. Each presentation will focus on specific milestones—from model refinement and financial validation to strategic alternatives—allowing students to incorporate mentor and peer feedback in iterative cycles. These checkpoints prepare students for advanced pitching and communication in Project III.

The module assessment will consist of a single graded presentation at the end of the project period. During the first contact session, students will receive guidance on the expected work plan, including desk and field research activities. A second session will be held for progress reporting and formative feedback. The final (third) session will be dedicated to the assessed

presentation, where students present their completed project work (30 minutes). This final presentation constitutes the sole graded component of the module.

4.1.3.2 Recommended Knowledge

Students should revisit their validated project concept from Accelerator Project I and begin collecting data for customer segmentation, value proposition design, and revenue-cost structure assumptions. Familiarity with tools such as Value Proposition Canvas, Lean Canvas, and financial feasibility estimations will support strong progression.

4.1.3.3 Usability and Relationship to other Modules

This module builds directly on Accelerator Project-I-, and feeds into the Pitch-Deck Project (Accelerator III). It synthesizes concepts from entrepreneurship, and innovation modules, and is strengthened by field insights from Organizational Visits & Cases. Students explore both entrepreneurial and intrapreneurial contexts, tailoring their modeling strategies to suit the chosen path.

4.1.3.4 Intended Learning Outcomes

No	Competence	ILO
1	Design	Design and refine a comprehensive business model using structured tools.
2	Evaluate	Evaluate customer segments, value propositions, and key resources for feasibility and strategic fit.
3	Analyze	Analyze and test business model assumptions through desk and field research.
4	Incorporate	Incorporate quantitative and qualitative feedback to improve model viability.
5	Present	Present a coherent business model demonstrating innovation, feasibility, and value creation.

4.1.3.5 Indicative Literature

- Osterwalder, A. & Pigneur, Y. (2010). Business Model Generation. Wiley.
- Gifford, C. (2018). Intrapreneurship Handbook: A Practical Guide for Corporate Innovators.

4.1.3.6 Entry Requirements

Prerequisites	2025-MBA-511
Co-requisites	-
Additional Remarks	-

4.1.3.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Accelerator Project II: Business Modelling Project	Presentations	30 minutes; Three progress presentations (team or individual,	100	45%	All

		depending on project structure)			

4.1.4 Accelerator Project III: Pitch-Deck Project

Module Name	**Accelerator Project III: Pitch-Deck Project**
Module Code	2025-MBA-513
Module ECTS	10
Study Semester	Mandatory: 2025-MBA-120-MA 3 Mandatory Elective:
Program Affiliation	2025-MBA-120-MA
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Project	120 h
Research and private study	100 h
Project coaching lectures and workshops	30 h
Hours Total	250

Module Components	**Number**	**Type**	**CP**
Accelerator Project III: Pitch-Deck Project	MBA-513	Project	10

4.1.4.1 Module Description

This final module of the three-part Accelerator Capstone series focuses on implementation, final validation, and professional pitching. The student project, either entrepreneurial or intrapreneurial. Students will refine their business models and supporting analyses (competitive, market, operational, and breakeven), finalize their pitch materials, and practice their delivery through structured coaching and peer review workshops.

Students will create compelling, investor-ready presentations and deliver them to mentors, industry leaders, or other stakeholder panels. The goal is to demonstrate implementation readiness, strategic clarity, and professional communication, drawing from insights and feedback accumulated across all three projects.

The module includes three structured checkpoints that guide students in refining their business model, validating key assumptions, and finalizing their pitch. Each session focuses on a specific milestone, from analytical updates to financial validation, supported by feedback from mentors and peers. This iterative process ensures students are fully prepared to deliver a professional, high-impact pitch to stakeholders by the end of the module.

The module assessment will consist of a single graded presentation at the end of the project period. During the first contact session, students will receive guidance on the expected work plan, including desk and field research activities. A second session will be held for progress reporting and formative feedback. The final (third) session will be dedicated to the assessed presentation, where students present their completed project work (30 minutes). This final presentation constitutes the sole graded component of the module.

4.1.4.2 Recommended Knowledge

Students should prepare to finalize and polish their business models, feasibility assessments, and stakeholder strategies. Reviewing best practices in financial storytelling, pitch-deck structure, and visual analytics is strongly encouraged to ensure readiness for pitching to real-world audiences.

4.1.4.3 Usability and Relationship to other Modules

This module concludes the Accelerator Capstone sequence and requires students to integrate all previous work from Accelerator Project I (exploration) and Project II (business modeling). It reinforces learning from MBA modules such as entrepreneurship and innovation strategy. Additionally, it draws on real-world exposure from Organizational Visits & Cases, providing students a platform to synthesize their skills into a professional-level deliverable.

4.1.4.4 Intended Learning Outcomes

No	Competence	ILO
1	Refine	Refine and finalize business models and feasibility reports in line with industry and stakeholder expectations.
2	Strengthen	Strengthen accounting, financial, and market analysis to enhance the credibility of the business case.
3	Develop	Develop advanced, visually engaging analytical reports that support strategic messaging.
4	Incorporate	Incorporate mentor and stakeholder feedback to improve presentation materials and delivery.
5	Deliver	Deliver a professional, persuasive pitch tailored to investors, executives, or innovation stakeholders.

4.1.4.5 Indicative Literature

- Kawasaki, G., (2016). 10 steps to perfect your startup pitch. Insights by Stanford Business. https://www.gsb.stanford.edu/insights/10-steps-perfect-your-startup-pitch
- Clingingsmith, D., Drover, W., & Shane, S. (2023). Examining the outcomes of entrepreneur pitch training: an exploratory field study. Small Business Economics, 60(3), 947-974.
- Osterwalder, A. & Pigneur, Y. (2010). Business Model Generation. Wiley.
- Gifford, C. (2018). Intrapreneurship Handbook: A Practical Guide for Corporate Innovators.

4.1.4.6 Entry Requirements

Prerequisites	2025-MBA-512
Co-requisites	-
Additional Remarks	-

4.1.4.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs

Accelerator Project III: Pitch-Deck Project	Presentation	30 minutes (pitching and panel feedback)	100	45%	All

4.1.5 Applied Project Management

Module Name	**Applied Project Management**
Module Code	2025-MSCM-CO-01
Module ECTS	5
Study Semester	Mandatory: 2025-MBA-120-MA 2; 2025-MBA-60-MA 2 Mandatory Elective: 2025-SCM-MSc 3
Program Affiliation	2025-SCM-MSc
Module Coordinator	Yilmaz Uygun

Student Workload	
Lecture	17.5
Seminars	17.5
Independent Study	90
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Applied Project Management	MSCM-CO-01	Lectures	5

4.1.5.1 Module Description

Managing supply chains requires the handling of numerous projects as to scope, time, resources, costs, quality and risks. This module addresses all project management issues holistically; dealing with risk management in detail. All of these areas include the transfer of specialist knowledge as well as soft skills.

Project Management contains the application of appropriate knowledge, processes, skills, tools and techniques to contribute to the success of temporary endeavors undertaken to create a unique product, service, or result. Project Management is of overwhelming relevance for global supply chains, esp. those which develop rapidly by innovative processes. In research and practice, project management is of increasing importance and it is correspondingly accepted to balance the competing project constraints of scope, quality, schedule, budget, resources and risk. On the individual level, project management knowledge can be considered a basic skill today. A special emphasis will be on risk management within projects. This comprises all coordinated activities that help understand, evaluate and take action on risks in order to minimize the effect of uncertainty on objectives. Complex projects face certain threats: natural disasters, terrorist attacks or the loss of important suppliers and service providers, all of which can disable projects for days or weeks. Thus, effective risk management can make the difference between success and failure of a project.

4.1.5.2 Recommended Knowledge

- Verbal and written communication skills

- Project Management Institute (2017): A Guide to the Project Management Body of Knowledge (PMBOK® Guide). 6th edition.

4.1.5.3 Intended Learning Outcomes

No	Competence	ILO
1	Apply	Apply important tools and methods of project management, quality management, risk management and suggest appropriate actions.
2	Manage	Manage projects efficiently and effectively.
3	Apply	Apply methods to assess and categorize risks based on their severity, likelihood of occurrence and likelihood of detection.
4	Communicate	Communicate clearly with project team members throughout the project life cycle.
5	Interact	Interact with stakeholders by continuously tracking and learning.
6	Apply	Apply tools to relate customer requirements to technical specifications for products, thus ensuring high customer satisfaction.
7	Critically	Evaluate critically quality problems based on data analysis (Pareto analysis, histograms, scatter diagrams, stratification).
8	Design	Design an appropriate supply chain risk management approach based on proactive and reactive strategies.
9	Develop	Develop an overall philosophy for continuous improvement and total quality management.
10	Take	Take responsibility for their own actions in project teams.

4.1.5.4 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.1.5.5 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Applied Project Management	Project Report	2500 word	100	45%	All intended learning outcomes of the module.

4.1.6 Digital Transformation and Innovation

Module Name	**Digital Transformation and Innovation**
Module Code	2025-MDSSB-DSAI-01
Module ECTS	5
Study Semester	Mandatory: 2025-DSSB-MSc 3; 2025-MBA-120-MA 3, MBA-60 Mandatory Elective:
Program Affiliation	2025-DSSB-MSc
Module Coordinator	Christoph Lattemann

Student Workload	
Seminars	35
Independent Study	90
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Digital Transformation of Organizations	MDSSB-DSAI-01-A	Seminar	2.5
Digital Services and Innovation	MDSSB-DSAI-01-B	Seminar	2.5

4.1.6.1 Module Description

The goal of this module is to help students learn, understand, and practice data-driven innovation for customers and change processes at an individual and organizational level. This module helps students understand real-life challenges in a complex and digitized world with multiple stakeholder interests. Further, students learn to develop and present innovative user-centered and theory-oriented solutions for real-world challenges in an IT-driven world. This module is home to two seminars of 7 weeks each. The first seminar investigates the digital transformations of organizations. It prepares students to understand and manage organizational change and transformation processes against a digitalization background. In particular, the following topics are discussed: organizational and algorithmic decision making, change and inertia, automation and reliability, and data-driven blindspots. The second seminar looks into digital innovation and their users. This seminar is strongly based on the paradigm of user-centeredness, user-centered design, and the ideas of the service dominant logic—a meta-theoretical framework for explaining value co-creation through exchange among various configurations of actors.

4.1.6.2 Recommended Knowledge

- The module gives the opportunity to do an additional preparatory presentation during the class for personal feedback on one's own performance in front of an audience. This additional presentation is voluntary that can improve the grade by 0.33 points (German grading system), but is not necessary to reach the best grade in the module (1.0).

4.1.6.3 Usability and Relationship to other Modules

This module teaches the impact of digital technologies on organizational change. Insights can be used in all modules, particularly in the core and elective business and society modules, during the Capstone project and the internship.

4.1.6.4 Intended Learning Outcomes

No	Competence	ILO
1	Summarize	Summarize and classify the new data- and customer-driven technologies in a business context.
2	Explain	Explain the economic and business rules in the information age.
3	Explain	Explain the pros and cons of reliance on data and automation in organizations.
4	Conduct	Conduct independent analyses of organizations,' markets,' and users' needs using scientific methods.
5	Explain	Explain the service dominant logic (SDL) for business/entrepreneurial activities and the power of new technologies for customer relationship management.
6	Improve	Improve their oral communication, along with individual and group presentation skills.

4.1.6.5 Indicative Literature

- Vargo, S. L., Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. Journal of Marketing, 68(1): 1-17.

4.1.6.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.1.6.7 Assessment and Completion

Components	Examination Type	Duration/ Length	Weight (%)	Minimum	ILOs
Digital Transformation of Organizations	Term Paper	3000 words	100	45%	All
Digital Services and Innovation					

4.2 Leadership and Strategy Area

4.2.1 Agile Leadership and Strategic Management

Module Name	**Agile Leadership and Strategic Management**
Module Code	2025-MCSSE-LAS-03
Module ECTS	2.5
Study Semester	Mandatory: 2025-CSSE-MSc 3; 2025-AST-MSc 3; 2025-MBA-120-MA 1 Mandatory Elective:
Program Affiliation	2025-CSSE-MSc
Module Coordinator	Jürgen Schönwälder

Student Workload	
Independent Study	45
Lecture	17.5
Hours Total	62.5

Module Components	**Number**	**Type**	**CP**
Agile Leadership and Strategic Management	MCSSE-LAS-03	Lectures	2.5

4.2.1.1 Module Description

This module focuses on key strategic aspects of the leadership and strategy development processes, specifically strategic problems solving, alignment, engagement and copying with black swans and paradigm shifts. The module draws on insights from a variety of fields such as business strategy, problem solving, strategic communication, strategic planning, and strategic resilience.

To build a holistic understanding, the module deals with the following topics:

- The strategic process: from analysis, definition, planning and evaluation

- Hypothesis driven problem solving

- Pyramid principle strategic communication

- Antifragile strategies

The module assessment will consist of three presentations. Students will know in the first session which topics need to be covered in their presentations.

4.2.1.2 Intended Learning Outcomes

No	Competence	ILO
1	understand	understand and analyse business strategies.
2	understand	understand and analyse strategic statements and levels of ambition.
3	understand	understand opportunities and threats on the external environment.
4	evaluate	evaluate sources of competitive advantage as well as strategic strengths and weaknesses.
5	analyse	analyse core challenges of agile leadership and strategy development.
6	apply	apply this knowledge to real-world strategic planning processes.
7	develop	develop and communicate strategic initiatives.

4.2.1.3 Indicative Literature

- Sola, D. & Couturier, J. 2013, How To Think Strategically, FT Publishing International.

4.2.1.4 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.2.1.5 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Agile Leadership and Strategic Management	Presentation	30 minutes	100	45%	All

4.2.2 Customer-centric Mindset and Agile Delivery Management

Module Name	**Customer-centric Mindset and Agile Delivery Management**
Module Code	2025-MCSSE-LAS-04
Module ECTS	2.5
Study Semester	Mandatory: 2025-CSSE-MSc 3; 2025-MBA-120-MA 1 Mandatory Elective:
Program Affiliation	2025-CSSE-MSc
Module Coordinator	Sohaib Hassan

Student Workload	
Lecture	17.5
Independent Study	45
Hours Total	62.5

Module Components	**Number**	**Type**	**CP**
Customer-centric Mindset and Agile Delivery Management	MCSSE-LAS-04	Lectures	2.5

4.2.2.1 Module Description

Successful firms are forced to walk a tightwire between meeting market needs and creating organizational efficiencies. Just how they do this requires, organization, insights, management understanding and determination. The modern manufacturing or service firm is simultaneously engaged in three core processes. 1) The design and development of products and services (BUILD), 2) The efficient and effective delivery of those products and services to the market (DELIVER), and 3) The process of gaining customers that wish to purchase those products and services or enter into transactions with the firm (CAPTURE). How it organizes and the processes it adopts are key to a firm´s ability to optimize these often divergent but highly interdependent activities.

While these three processes are often at odds with each other, this module will inform, challenge, and enlighten the participants on a) The best practices in each of these areas, b) The ways to improve their understanding and implementation of course concepts, and c) The trends that they will invariably deal with in the near future. In this module, students touch upon the design of innovative R&D, operations, and marketing strategies that provide firms with a strategic and sustainable competitive advantage that is capable of utilizing global resources and capturing markets. These strategies will constantly be viewed in a competitive, resource constrained, and capital efficient marketplace.

The module assessment will consist of three presentations. Students will know in the first session which topics need to be covered in their presentations.

4.2.2.2 Intended Learning Outcomes

No	Competence	ILO
1	Analyze	Analyze critically the task of going to market under contemporary conditions and to examine the major functions that comprise the marketing servicing task.
2	Evaluate	Evaluate various types of policies that can be employed in guiding market centric activities.
3	Develop	Develop an awareness of the major types of market problems faced by organizations, with emphasis on sound analytical approaches to effective problem-solving decisions.
4	Analyze	Analyze different business models and understand how the marketing function can be employed to enhance them.

4.2.2.3 Indicative Literature

- Chernev, A., 2018, Strategic Marketing Management.

4.2.2.4 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.2.2.5 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Customer-centric Mindset and Agile Delivery Management	Presentation	30 minutes	100	45%	All

4.2.3 Digital Business Models and Functions

Module Name	**Digital Business Models and Functions**
Module Code	2025-MDSSB-DTRANS-02
Module ECTS	5
Study Semester	Mandatory: 2025-DSSB-MSc 2; 2025-MBA-120-MA 2, MBA - 60 Mandatory Elective: 2025-F-ACS-BSc 4; 2025-S-ACS-BSc 3
Program Affiliation	2025-DSSB-MSc
Module Coordinator	Sohaib Hassan

Student Workload	
Asynchronous Self Study	35
Interactive Learning	10
Exam Preparation	20
Independent Study	60
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Digital Business Models and Functions	MDSSB-DTRANS-02	Lectures	5

4.2.3.1 Module Description

Businesses today have just begun to understand the potential of data abundance. Companies such as Amazon and Google were among the pioneers of data-driven business models. Many technology-based start-ups are eager to follow their lead. The data-driven revolution in the business world is nothing less than what Schumpeter termed a process of creative destruction. In this case, the destruction is of the long-established ways of doing business. The representatives of this new-age alternative business models range from shared economies and platform businesses to subscription models, even in the most traditional industries.

In this module, we will uncover the antecedents, drivers, and potentials of a data-driven economy by focusing on entrepreneurs and how their experiments creatively destruct the way we used to do business. We will explain why ecommerce is the fastest growing segment in retail today. We will examine e-commerce business models, technology infrastructure, e-commerce marketing and advertising concepts, social networks, auctions, and portals, as well as ethical, social, and political issues with the help of prominent case studies. At the end of the module, students will be able to build their own e-commerce (small-scale) companies.

4.2.3.2 Usability and Relationship to other Modules

This module focuses on digital business concepts and digital business models. It connects to all business modules in the "Society and Business" track to the core "Digital Transformation and Innovation" and "Artificial Intelligence in Business and Society" modules. However, it also forms the base for students who want to develop their own business ideas in the discovery section of the program and outside academia.

4.2.3.3 Recommended Knowledge

- Academic writing skills

- Good understanding of the principles of business functions

4.2.3.4 Intended Learning Outcomes

No	Competence	ILO
1	Know	Know about the development of business models on the Internet.
2	Understand	Understand conceptually how to build an e-commerce presence.
3	Comprehensively	Comprehensively understand e-commerce security and payment systems.
4	Critically	Critically understand e-commerce marketing and advertising.
5	Discuss	Discuss and reflect on major obstacles and possible solutions in e-commerce ethics.
6	Evaluate	Evaluate critically and design business case studies.

4.2.3.5 Indicative Literature

- Zott, Amit (2017) Business Model Innovation: How to Create Value in a Digital World. Marketing Intelligence Review 9 (1) DOI: https://doi.org/10.1515/gfkmir-2017-0003.
- Wirtz (2019) Digital Business Models: Concepts, Models, and the Alphabet Case Study. Cham: Springer Nature.

4.2.3.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.2.3.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Digital Business Models and Functions	Term Paper	5000 words	100	45%	All

4.2.4 Transformational Change Management

Module Name	**Transformational Change Management**
Module Code	2025-MCSSE-MGT-03
Module ECTS	5
Study Semester	Mandatory: 2025-CSSE-MSc 3; 2025-MBA-120-MA 3, MBA 60 Mandatory Elective:
Program Affiliation	2025-CSSE-MSc
Module Coordinator	Sohaib Hassan

Student Workload	
Lecture	80
Independent Study	45
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Transformational Change Management	MCSSE-MGT-03	Lectures	5

4.2.4.1 Module Description

Change is part of every successful manager's and organization's life. Thus, learning to lead change and/or be part of a successful change effort, is essential for anyone who hopes to rise from being an individual contributor. Some change efforts have no impact whatsoever; the organization is neither better nor worse afterwards. This is a waste of human capital (and probably financial capital as well). Some change efforts work for a while, but then gravity takes over and the organization returns to where it was beforehand; again, a waste. And there are other change projects that get us to a new level, and we stay there, which is not bad; a vast improvement on the previous two situations. But what we all want, and what this course will focus on, is to change an organization in some way, and put it on a continuous upward trajectory.

That is transformation. To build this understanding, the courses deals with the following topics:

- Change management models

- Influencing styles and tactics

- Communicating well in a group

- Understanding your biases

- Seeing and understanding different leadership styles in company transformations

- Stakeholder management

4.2.4.2 Intended Learning Outcomes

No	Competence	ILO
1	Understand	Understand, evaluate, and apply different leadership styles.
2	Understand	Understand and evaluate the change process in organizations.
3	Understand	Understand and apply communications and influencing.
4	Evaluate	Evaluate their role in a change situation.
5	Assess	Assess the stakeholders in any change context.
6	Lead	Lead or be part of an organizational change effort.

4.2.4.3 Indicative Literature

- Daniel Goleman, HBR, 2002, Leadership that gets results.

4.2.4.4 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.2.4.5 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Transformational Change Management	Presentation	30 minutes	100	45%	All

4.3 Specialization Area

4.3.1 Big Data Challenge

Module Name	**Big Data Challenge**
Module Code	2025-MDE-CO-01
Module ECTS	5
Study Semester	Mandatory: 2025-DE-MSc 1; 2025-SCM-MSc 1 Mandatory Elective: 2025-MBA-120-MA 1; 2025-MBA-60-MA 1
Program Affiliation	2025-DE-MSc
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Lecture	17.5
Project Work	90
Independent Study	17.5
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Big Data Challenge	MDE-CO-01	Lectures	5

4.3.1.1 Module Description

Big data is one of the buzz words of the current decade and refers to the collection and exploration of complex data sets. This complexity of big data is typically described by the four V's: Volume, Velocity, Variety, and Veracity. From a business perspective, big data is often portrayed as a sea of big opportunities. The public debate is torn between the two poles portrayed by the writers George Orwell and Aldous Huxley: complete surveillance resulting in oppression on the one end, and irrelevance and narcissism on the other. Technological research quite naturally is mostly concerned with the technical feasibility of different approaches, the continuously increasing challenges with respect to the four V's, and the creative solutions needed to tackle them.

In this module students receive an overview of big data by looking at it from various perspectives, primarily the business and societal points of view. The focus is not on the technical methods and skills, but on case studies that show big data and data engineering in a cross-section.

4.3.1.2 Recommended Knowledge

- Researching information, assessing sources and report writing

- Read the Syllabus

- Read Susan Ettlinger (2015). What Do we do with all this Big Data? Altimeter. https://www.prophet.com/2015/01/new-research-what-do-we-do-with-all-this-big-data/

- Watch corresponding TEDTalk

4.3.1.3 Usability and Relationship to other Modules

- For DE: This module provides an overview on practical big data applications. The computational details will then be studied in MDE-CS-04.

- For SCM: Concepts are applied in MSCM-CO-03 Trends & Challenges in Supply Chain Management. Project management concepts taught in MSCM-CO-01 will be applied. Academic writing skills taught in MSCM-CAR-01 facilitate the completion of the tasks in this module.

4.3.1.4 Intended Learning Outcomes

No	Competence	ILO
1	Contribute	Contribute knowledgeably to the current debate about big data, digitalization and industry 4.0.
2	Explain	Explain and discuss pros and cons of digitalization from a business perspective as well as a societal perspective.
3	Perform	Perform a SWOT analysis on current big data initiatives.
4	Evaluate	Evaluate technological possibilities and innovations driven by big data.
5	Assess	Assess the business opportunities of current big data developments.

4.3.1.5 Indicative Literature

- McLellan (2013): Big Data: An Overview https://www.zdnet.com/article/big-data-an-overview/
- S. Akter & S. Fosso Wamba, Big data analytics in e-commerce: A systematic review and agenda for future research, 2016. Electronic Markets, 26 173-194.
- Z. Lv, H. Song, P. Basanta-Val, A. Steed and M. Jo. "Next-Generation Big Data Analytics: State of the Art, Challenges, and Future Research Topics," in IEEE Transactions on Industrial Informatics, vol. 13, no. 4, pp. 1891-1899, Aug. 2017.

4.3.1.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.3.1.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Big Data Challenge	Project Report	2500 words	100	45%	All ILOs

4.3.2 Data Analytics

Module Name	**Data Analytics**
Module Code	2025-MDE-CO-02
Module ECTS	5
Study Semester	Mandatory: 2025-DE-MSc 1; 2025-AST-MSc 1 Mandatory Elective: 2025-DSSB-MSc 1 or 3; 2025-MBA-120-MA 1; 2025-MDDA-BSc 1; 2025-MBA-60-MA 1
Program Affiliation	2025-DE-MSc
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Independent Study	90
Lecture	17.5
Tutorial	17.5
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Data Analytics	MDE-CO-02	Lectures	5

4.3.2.1 Module Description

This module introduces concepts and methods of data analytics. The objective of the module is to present methods for gaining insight from data and drawing conclusions for analytical reasoning and decision-making. The module comprises a broad spectrum of methods for modelling and understanding complex datasets. Comprising both descriptive and predictive analytics, the standard portfolio of supervised and unsupervised learning techniques is introduced. Automatic analysis components, such as data transformation, aggregation, classification, clustering, and outlier detection, will be treated as an integral part of the analytics process.

As a central part of this module, students are introduced to the major concepts of statistical learning such as cross-validation, feature selection, and model evaluation. The course takes an applied approach and combines the theoretical foundation of data analytics with a practical exposure to the data analysis process.

4.3.2.2 Recommended Knowledge

- Read the Syllabus.

- Take the free online course: Introduction to Data Science at https://cognitiveclass.ai/courses/data-science-101/

4.3.2.3 Usability and Relationship to other Modules

In this module students will learn concepts and various techniques for data analysis. They will be rigorously applied in MDE-CS-03 as well as in the applied projects MDE-DIS-02 and MDE-DIS-03, and typically also in the master thesis.

4.3.2.4 Intended Learning Outcomes

No	Competence	ILO
1	Explain	Explain advanced data analytics techniques in theory and application.
2	Apply	Apply data analytics methods to real-life problems using appropriate tools.
3	Evaluate	Evaluate and compare different data analytics algorithms and approaches.
4	Apply	Apply statistical concepts to evaluate data analytics results.

4.3.2.5 Indicative Literature

- G. James, D.Witten, T. Hastie, Rob Tibshirani: Introduction to Statistical Learning with R by Springer, 2013 (ISLR).
- A. Telea, Data Visualization: Principles and Practice, Wellesley, Mass.: AK Peters, 1st edition, 2008.(DV).
- M. Ward, G. Grinstein, D. Keim, Interactive Data Visualization: Foundations, Techniques, and Applications. AK Peters, 1st edition, 2010. (IDV)

4.3.2.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.3.2.7 Assessment and Completion

Components	Examination Type	Duration/ Length	Weight (%)	Minimum	ILOs
Data Analytics	Project Report	20 Pages	100	45%	All

4.3.3 Data Mining

Module Name	**Data Mining**
Module Code	2025-MDE-BSC-01
Module ECTS	5
Study Semester	Mandatory: Mandatory Elective: 2025-DE-MSc 2; 2025-DSSB-MSc 2 or 4; 2025-MBA-120-MA 2
Program Affiliation	2025-DE-MSc
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Lecture	17.5
Project Work	90
Independent Study	17.5
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Data Mining	MDE-BSC-01	Lectures	5

4.3.3.1 Module Description

The focus of this module is on practical applications of algorithms and computational paradigms that allow computer-based search and detection of data patterns and regularities. Students learn how to use such tools to perform predictions and make forecasts. Students will study data mining as the core component in the knowledge discovery in database process which deals with extracting useful information from raw data. This knowledge discovery process includes data selection, cleaning, coding, using different statistical and machine learning techniques, and visualization of data and generated patterns and structures. The module aims tot provide an overview of all these issues and illustrates the whole process by examples.

A major component of the module is group-based participation in a data analysis competition. This competition allows students to apply the concepts learned in class and to develop the computational skills to analyze data in a collaborative setting.

4.3.3.2 Recommended Knowledge

- Knowledge of Data Analytics software/ programming languages such as R or Python.

- Practice data analysis tasks

- Read the Syllabus.

4.3.3.3 Usability and Relationship to other Modules

This module builds on the core module data analytics MDE-CO-02 and prepares students for applied projects in data analysis as well as a master thesis in this field.

4.3.3.4 Intended Learning Outcomes

No	Competence	ILO
1	Implement	Implement and apply advanced data mining methods with appropriate tools.
2	Evaluate	Evaluate and compare the suitability, scalability and efficiency of different methods in practical settings.
3	Gain	Gain experience in performing a full cycle of data mining and data analysis.
4	Acquire	Acquire practical skills to tackle data mining problems.

4.3.3.5 Indicative Literature

- G. James, D. Witten, T. Hastie, R. Tibshiran, Introduction to Statistical Learning with R by Springer, 2013 (ISLR).
- J. VanderPlas, Python Data Science Handbook, 2016 - https://jakevdp.github.io/PythonDataScienceHandbook/.

4.3.3.6 Entry Requirements

Prerequisites	2025-MDE-CO-02 Data Analytics
Co-requisites	-
Additional Remarks	-

4.3.3.7 Assessment and Completion

Components	Examination Type	Duration/ Length	Weight (%)	Minimum	ILOs
Data Mining	Project Report	20 pages	100	45%	All

4.3.4 Machine Learning

Module Name	**Machine Learning**
Module Code	2025-MDE-CO-04
Module ECTS	5
Study Semester	Mandatory: 2025-DE-MSc 2 Mandatory Elective: 2025-CSSE-MSc 2; 2025-DSSB-MSc 2; 2025-MBA-120-MA 2
Program Affiliation	2025-DE-MSc
Module Coordinator	Stefan Kettemann

Student Workload	
Lecture	35
Independent Study	90
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Machine Learning	MDE-CO-04	Lectures	5

4.3.4.1 Module Description

Machine learning (ML) is a module that concerns algorithms that are fed with (large quantities of) real-world data, and which return a compressed "model" of the data. An example is the "world model" of a robot: the input data are sensor data streams, from which the robot learns a model of its environment. Another example is a spoken language model: the input data are speech recordings, from which ML methods build a model of spoken English -- useful, for instance, in automated speech recognition systems. There are many formalisms in which such models can be cast, and an equally large diversity of learning algorithms. At the same time, there is a relatively small number of fundamental challenges that are common to all of these formalisms and algorithms.

The module introduces such fundamental concepts and illustrates them with a choice of elementary model formalisms (linear classifiers and regressors, radial basis function networks, clustering, neural networks). Furthermore, the module also (re)introduces required mathematical material from probability theory and linear algebra. The main educational aims are twofold: to make students fully aware of the two main hurdles for obtaining good models from data: (i) the "curse of dimensionality" and (ii) the bias-variance dilemma and to provide standard tools to cope with these difficulties, namely (i) dimension reduction by feature extraction, for example via PCA or clustering, and (ii) cross-validation and regularization.

4.3.4.2 Usability and Relationship to other Modules

This module is a natural companion to the "Principles of Statistical Modeling" (PSM) module MDE-CS-03. The ML module focuses on practical ML skills, whereas PSM module on rigorous mathematical formalism and analysis. For students not familiar with graph theory, it is recommended to take the first semester course MDE-CS-01 Network Theory, which introduces concepts used in this Machine Learning module.

4.3.4.3 Recommended Knowledge

- Basic linear algebra, calculus and probability theory, as typically acquired in entry modules in BSc studies.

- Read the syllabus.

- Highly recommended: Mitchell, Tom M.: Machine Learning (McGraw-Hill, 1997) IRC: Q325.5.M58 1997. This standard, classical textbook gives a very accessible overview of ML.

4.3.4.4 Intended Learning Outcomes

No	Competence	ILO
1	Design	Design, implement and exploit elementary supervised ML methods for classification and regression with expert care given to dimension reduction preprocessing and regularization.
2	Understand	Understand and practically use PCA and linear regression.
3	Understand	Understand the core ideas behind feedforward neural networks and the backpropagation algorithm, as the basis for accessing "deep learning" methods.

4.3.4.5 Indicative Literature

- T. M. Mitchel, Machine Learning, McGraw-Hill, 1997, IRC: Q325.5.M58.

4.3.4.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.3.4.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Machine Learning	Written Examination	120 minutes	100	45%	All

4.3.5 Visual Communication and Data Story-telling

Module Name	**Visual Communication and Data Story-telling**
Module Code	2025-MDSSB-MET-03
Module ECTS	5
Study Semester	Mandatory: 2025-DSSB-MSc 3 Mandatory Elective: 2025-MBA-120-MA 3
Program Affiliation	2025-DSSB-MSc
Module Coordinator	Adalbert F.X. Wilhelm, Jan Lorenz

Student Workload	
Lecture	17.5
Tutorial	17.5
Project Work	90
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Visual Communication and Data Story-telling	MDSSB-MET-03	Lecture/Tutorial	5

4.3.5.1 Module Description

Data is often intuitively communicated using statistical graphs and visualization dashboards. Effective communication using visuals and dashboards has become a key qualification for modern business intelligence professionals. This module introduces the basic ideas and concepts of data visualization and data story-telling. Computer-based visualization systems provide visual representations of datasets to process data more effectively. These datasets may come from different sources, such as scientific experiments, simulations, medical scans, commercial databases, financial transactions, health records, and social networks. They also cater to different audiences. Students will learn about the theory of graphical design and the science of visual perception to make compelling visual representations with static and interactive maps for a scientific and non-scientific audience. Students learn to design elegant data visualizations that support the exchange of information and corroborate the data findings. Students also learn to evaluate visualization systems from both the designer's and audience's perspective. Visualization skills are further elaborated with the support of selected online programming snippets.

Topics:

- Theory of graphical design

- Grammar of graphics

- Science of visual perception

- Exploratory data analysis and static graphics in R

- Scientific story-telling for various formats and audiences

- Visualization programming

4.3.5.2 Recommended Knowledge

Read the syllabus and search for appropriate online example cases.

4.3.5.3 Usability and Relationship to other Modules

Can be used in all modules, particularly in the Capstone project and master thesis modules.

4.3.5.4 Intended Learning Outcomes

No	Competence	ILO
1	Represent	Represent various data sources using appropriate visual formats and techniques.
2	Choose	Choose suitable visual representations for different data sets.
3	Evaluate	Evaluate visual depictions of data.
4	Assist	Assist users in visual data analysis.
5	Target	Target visual representations to different audiences.

4.3.5.5 Indicative Literature

- Dykes (2019) Effective Data Storytelling: How to Drive Change with Data, Narrative, and Visuals. Hoboken, NJ: Wiley.
- Nussbaumer, Knaflic (2015) Storytelling with Data: A Data Visualization Guide for Business Professionals. Hoboken, NJ: Wiley.

4.3.5.6 Entry Requirements

Prerequisites	2025-MDSSB-DSOC-02, 2025-MDSSB-MET-01
Co-requisites	-
Additional Remarks	-

4.3.5.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Visual Communication and Data Story-telling	Project Report	6000 - 8000 words	100	45%	All

4.3.6 Text Analysis and Natural Language Processing

Module Name	**Text Analysis and Natural Language Processing**
Module Code	2025-MDSSB-MET-02
Module ECTS	5
Study Semester	Mandatory: 2025-DSSB-MSc 2 Mandatory Elective: 2025-CSSSE-MSc 2; 2025-MBA-120-MA 2
Program Affiliation	2025-DSSB-MSc
Module Coordinator	Adalbert F.X. Wilhelm, Hilke Brockmann, Jan Lorenz

Student Workload	
Seminars	17.5
Laboratory	17.5
Independent Study	90
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Text Analysis and Natural Language Processing	MDSSB-MET-02	Seminars	5

4.3.6.1 Module Description

This module will teach the fundamentals of text mining, natural language processing, and automated content analysis using R. Students will learn the entire text analysis pipeline, from basic web scraping techniques for collecting text data from social media, over text representations and ontologies, to text mining algorithms and efficient representation of analysis results. Students will be exposed to theoretical and methodological foundations of text mining, such as word frequencies, ontologies, bag-of-word, as well as the application of machine learning algorithms for text and sentiment analysis. The module will introduce exemplary studies on text and sentiment analysis and provide an opportunity for hands-on programming to realize different analyses. The module covers a spectrum of text mining methods, from basic lexicographic measures to more complex statistical learning algorithms such as sentiment analysis and topic modeling.

4.3.6.2 Recommended Knowledge

Programming skills in R or Python at an intermediate level

4.3.6.3 Usability and Relationship to other Modules

This module translates the insights from “Data Science Concepts” into text analysis. The module lays the basis for core and elective modules in semester 2 and 3, particularly for the “Digital Public Spheres,” “Data Science Lab,” “Data Analytics,” and “Cybercriminology” modules.

4.3.6.4 Intended Learning Outcomes

No	Competence	ILO
1	Explain	Explain the concept of “text as data”.
2	Use	Use basic methods for information extraction and text data retrieval.
3	Process	Process and prepare text data for statistical modeling and automated content analysis.
4	Perform	Perform different text analyses using text mining packages in R.
5	Interpret	Interpret diverse text analytical measures.
6	Undertake	Undertake a knowledgeable automated content analysis with text data.

4.3.6.5 Indicative Literature

- Silge, Robinson (2017) Text Mining with R: A Tidy Approach. Sebastopol, CA: O’Reilly.

4.3.6.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.3.6.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Text Analysis and Natural Language Processing	Project Report	3000 words	100	45%	All

4.3.7 Business Intelligence

Module Name	**Business Intelligence**
Module Code	2025-MSCM-CO-11
Module ECTS	5
Study Semester	Mandatory: 2025-SCM-MSc 1 Mandatory Elective: 2025-MBA-120-MA 1; 2025-MBA-60-MA 1
Program Affiliation	2025-SCM-MSc
Module Coordinator	Yilmaz Uygun

Student Workload	
Lecture	35
Group Discussion	45
Independent Study	45
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Business Intelligence	MSCM-CO-11	Lectures	5

4.3.7.1 Module Description

Business Intelligence (BI) refers to the process of collecting, analyzing, and presenting data to support business decision-making. BI involves the use of software tools and techniques to gather data from various company-wide sources and databases and transform it into meaningful insights and reports to provide decision-makers with accurate and up-to-date information that can be used to make strategic decisions. BI can help businesses identify trends, opportunities, and areas for improvement, and can be used in a variety of areas, such as sales and marketing, finance, operations, and human resources.

Some common BI techniques and tools include, but is not limited to:

- data mining

- data warehousing

- reporting

- dashboarding

4.3.7.2 Recommended Knowledge

- Basics of Statistical Analytics and Basics of database and SQL

- Sharda, R.; Delen, D.; Turban,E.; King, D. (2017): Business Intelligence: A Managerial Approach, Global Edition. Person Education.

4.3.7.3 Intended Learning Outcomes

No	Competence	ILO
1	Discuss	Discuss different definitions and terms commonly used in BI.
2	Evaluate	Evaluate how BI can help make better decisions.
3	Apply	Apply software tools and techniques to perform data analyses and reporting.
4	Compare	Compare and contrast different BI techniques and their contribution to successful decision making.
5	Integrate	Integrate BI in logistics and SCM processes to understand and analyze real-world problems.

4.3.7.4 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.3.7.5 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Business Intelligence	Project Report	2500 words	100	45%	All

4.3.8 Supply Chain Management and Logistics

Module Name	**Supply Chain Management and Logistics**
Module Code	2025-MSCM-CO-02
Module ECTS	5
Study Semester	Mandatory: 2025-SCM-MSc 1 Mandatory Elective: 2025-MBA-120-MA 1; 2025-MBA-60-MA 1
Program Affiliation	2025-SCM-MSc
Module Coordinator	Stanislav Chankov

Student Workload	
Lecture	35
Independent Study	90
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Supply Chain Management and Logistics	MSCM-CO-02	Lectures	5

4.3.8.1 Module Description

The focus of this module is to provide a holistic perspective on logistics and supply chain management in terms of processes, function, conflicting targets, key terms and definitions, and main methods.

The module is structured in three main parts:

- Logistics Processes- covers the procurement, production, and distribution processes.

- Logistics Management- covers inventory management, logistics service providers and lean management.

- Supply Chain Management- covers cross-company management aspects and supply chain strategies.

4.3.8.2 Recommended Knowledge

- Logical and analytical skills

- Christopher, M (2016): Logistics & Supply Chain Management. 5th edition. Financial Times Publishing.

4.3.8.3 Usability and Relationship to other Modules

This module is the pre-requisite for several other modules, i.e. MSCM-CO-03 Trends & Challenges in SCM, MSCM-CO-04 Advanced Supply Chain Management, MSCM-CO-05 Purchasing & Distribution, MSCM-RD-02 Supply Chain Engineering. Project management concepts taught in MSCM-CO-01 will be applied

4.3.8.4 Intended Learning Outcomes

No	Competence	ILO
1	Discuss	Discuss the definitions and terms commonly used in the logistics and supply chain management realm.
2	Evaluate	Evaluate how logistics and supply chain operations impact the economic success of a company.
3	Analyze	Analyze the processes and strategies of procurement, production, and distribution logistics.
4	Develop	Develop solutions to logistics problems by applying different methods and tools for analyzing and improving logistics/supply chain processes.
5	Evaluate	Evaluate how economic and industry trends impact the logistics and supply chain performance of production and service provider companies.
6	Compare	Compare and contrast different supply chain strategies and their applicability to different settings.
7	Integrate	Integrate knowledge in logistics and SCM to solve different case studies and real-world problems.

4.3.8.5 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.3.8.6 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Supply Chain Management and Logistics	Written Examination	120 minutes	100	45%	All

4.3.9 Sustainable Cities and Transportation

Module Name	**Sustainable Cities and Transportation**
Module Code	2025-MSCM-CO-08
Module ECTS	5
Study Semester	Mandatory: Mandatory Elective: 2025-SCM-MSc 3; 2025-DSSB-MSc 3; 2025-MBA-120-MA 3
Program Affiliation	2025-SCM-MSc
Module Coordinator	Hendro Wicaksono

Student Workload	
Lecture	35
Group Discussion	45
Independent Study	45
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Sustainable Cities and Transportation Concepts	MSCM-CO-08	Lectures	5

4.3.9.1 Module Description

In recent years, cities around the world have been initiating and developing ideas and projects that use the word “smart.” These projects and ideas are characterized by technologies, such as green energy, artificial intelligence, internet-of-things, and self-driving vehicles, that require large amounts of data. This module focuses on the main considerations of smart-city projects, including intelligent transportation (public transportation, urban logistics, smart vehicle) and environmental infrastructure (energy, water, and waste), and the technological backbone, such as the internet-of-things, cloud computing, and data analytics.

4.3.9.2 Usability and Relationship to other Modules

- Concepts in MDE-CO-01 Big Data Challenge will be applied. Academic writing skills in MSCM-CAR-01 facilitate the completion of tasks in this module.

- It serves as a mandatory elective module in the Society and Business Track for DSSB.

4.3.9.3 Intended Learning Outcomes

No	**Competence**	**ILO**

1	Identify	Identify typical scenarios of smart-city projects and evaluate the opportunities and challenges involved.
2	Discover	Discover the backbone technologies required for intelligent transportation and environmental infrastructure and analyze the economics, ecological, and social impacts.
3	Develop	Develop technological architecture concepts for typical smart-city scenarios.
4	Analyze	**Analyze** smart-city datasets to identify and interpret data needed for improved decision-making in smart-city contexts .

4.3.9.4 Indicative Literature

McClellan,S; Jimenez, J.A.; Koutitas, G.: Smart Cities Applications, Technologies, Standards, and Driving Factors, Springer, 2018.

4.3.9.5 Entry Requirements

Prerequisites	2025-MDE-CO-01
Co-requisites	-
Additional Remarks	-

4.3.9.6 Assessment and Completion

Components	**Examination Type**	**Duration/Length**	**Weight (%)**	**Minimum**	**ILOs**
Sustainable Cities and Transportation	Project Report	2500 words	100	45%	All

4.3.10 Advanced Supply Chain Management

Module Name	**Advanced Supply Chain Management**
Module Code	2025-MSCM-CO-04
Module ECTS	5
Study Semester	Mandatory: 2025-SCM-MSc 2 Mandatory Elective: 2025-MBA-120-MA 2
Program Affiliation	2025-SCM-MSc
Module Coordinator	Yilmaz Uygun

Student Workload	
Seminars	35
Group Discussion	45
Independent Study	45
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Advanced Supply Chain Management	MSCM-CO-04	Seminars	5

4.3.10.1 Module Description

Ensuring seamless material flows along globalized and digitalized supply chains is becoming increasingly challenging. Supply chain managers require information and planning systems that are capable of properly planning, scheduling, and controlling material flows across different locations. Thus, such planning systems (e.g., SAP Integrated Business Planning) are an important asset in today´s supply chains.

In this module, students will deal with challenges imposed by such global and digitalized supply chains by using specific software. By using this software, students will learn how best to plan, monitor, and control processes in operations, demand, and inventory planning by considering planning models and user roles. They will understand both the possibilities and limits of such software through hands-on exercises and case studies that they will solve by using it.

4.3.10.2 Recommended Knowledge

- Researching information, assessing sources, verbal communication skills

- Markin, S & Sinha, A. (2018): SAP Integrated Business Planning - Functionality and Implementation. Rheinwerk Publishing / SAP Press.

4.3.10.3 Usability and Relationship to other Modules

This module complements MSCM-CO-02 Supply Chain Management and Logistics by using a complex planning system in supply chains

4.3.10.4 Intended Learning Outcomes

No	Competence	ILO
1	Set	Set up and deploy such software in a company´s IT landscape.
2	Apply	**Apply** advanced supply chain planning systems to manage and optimize supply chain operations efficiently
3	Configure	Configure and use different applications, such as operations, demand, supply, and inventory planning applications.
4	Measure	Measure progress using specified control tools.

4.3.10.5 Entry Requirements

Prerequisites	2025-MSCM-CO-02
Co-requisites	-
Additional Remarks	Supply Chain Management and Logistics

4.3.10.6 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Advanced Supply Chain Management	Project Report	2500 words	100	45%	All

4.3.11 Purchasing and Distribution

Module Name	**Purchasing and Distribution**
Module Code	2025-MSCM-CO-05
Module ECTS	5
Study Semester	Mandatory: 2025-SCM-MSc 2 Mandatory Elective: 2025-MBA-120-MA 2
Program Affiliation	2025-SCM-MSc
Module Coordinator	Yilmaz Uygun

Student Workload	
Seminars	35
Group Discussion	45
Independent Study	45
Hours Total	125

Module Components	**Number**	**Type**	**CP**
International Purchasing	MSCM-CO-05-B	Seminars	2.5
Distribution Logistics	MSCM-CO-05-A	Seminars	2.5

4.3.11.1 Module Description

This module covers two main aspects of supply chain management: purchasing and distribution.

The first part of the module deals with purchasing as a part of the entire business as well as with the prerequisites for profitable business overall. This part is based on group work and discussions, with a focus on collaborative approaches and on understanding and developing these approaches throughout the students' careers. The aim here is to gain a deep understanding of the possibilities and challenges procurement offers and faces in an organization. Another aim is to improve economic thinking skills and gain an understanding of how the key elements influence a business and its financial standing.

A major objective of the second part of the module is to equip students with a sound knowledge of processes and key business challenges within the field of distribution. Here, the evolution of distribution logistics from direct-to-store deliveries in the early 1970s up to same-day deliveries and omnichannel supply chains developed by companies today will be outlined. Based on that knowledge, new operational challenges imposed by e-commerce on the warehousing aspect of distribution logistics namely the emergence of e-fulfillment centers and the increasing importance of parcel and sorting delivery centers—will be addressed. Finally, last-mile-delivery concepts, with a focus on different business models (e.g., online retailers, the sharing economy), will be covered alongside the associated challenges for traditional transport and distribution strategies and novel solution approaches.

4.3.11.2 Recommended Knowledge

- Logical thinking

- Van Weele, A. (2018): Purchasing and Supply Chain Management. 7th edition. Cengage Learning EMEA Publishing.

4.3.11.3 Usability and Relationship to other Modules

This module deals in detail with purchasing and distribution concepts introduced in MSCM-C0-02 Supply Chain Management and Logistics and MSCM-CO-04 Advanced Supply Chain Management and concepts taught in MSCM-CO-01 will be applied. Academic writing skills in MSCM-CAR-01 facilitate the completion of the tasks in this module.

4.3.11.4 Intended Learning Outcomes

No	Competence	ILO
1	Asses	Assess and apply different purchasing models critically to ensure efficient supply of goods.
2	Develop	Develop purchasing strategies, plans and related processes in a global environment.
3	Develop	Develop team working skills and ability to cooperate with the different people involved in purchasing.
4	Think	Think economically and understand how the key elements in purchasing influence a business and its financial standing.
5	Design	Design distribution systems by considering and combining different modes of transportation and warehousing.
6	Crtitically	Critically evaluate and apply methods of efficiently running distribution processes.
7	Evaluate	Evaluate the challenges and opportunities warehouses and distribution centers are facing to fulfill specific requirements.
8	Deal	Deal with the rising importance and complexity of last-mile deliveries and novel methods of tackling associated delivery problems.
9	Investigate	Investigate solutions for complex delivery systems independently and develop alternative approaches.

4.3.11.5 Entry Requirements

Prerequisites	2025-MSCM-CO-02
Co-requisites	-
Additional Remarks	Supply Chain Management and Logistics

4.3.11.6 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
International Purchasing	Term Paper	2500 words	50	45%	All

Distribution Logistics	Term Paper	2500 words	50	45%	All

4.3.12 Data Analytics in Supply Chain Management

Module Name	**Data Analytics in Supply Chain Management**
Module Code	2025-MSCM-CO-07
Module ECTS	5
Study Semester	Mandatory: Mandatory Elective: 2025-DE-MSc 3; 2025-SCM-MSc 3; 2025-MBA-120-MA 3
Program Affiliation	2025-SCM-MSc
Module Coordinator	Hendro Wicaksono

Student Workload	
Lecture	35
Group Discussion	45
Independent Study	45
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Data Analytics in Supply Chain Management	MSCM-CO-07	Lectures	5

4.3.12.1 Module Description

In recent years, big data has become a significant topic in supply chain management, as the amount of data generated in supply chain management practices has grown exponentially. Data analytics are techniques that apply data mining, statistical analysis, predictive analytics, and machine learning to uncover hidden patterns, correlations, trends, and other business-valuable information and knowledge from data.

The module focuses on the supply chain management scenarios that generate and consume data intensively and require data analytics to improve the decision-making process through descriptive, predictive, and prescriptive analytics. These include:

- Descriptive statistics on and historical insight into companies' production, financial, operations, sales, customers, etc.

- Forecasting customer behavior, purchasing patterns, production performance, energy consumption, etc.

- Prescriptive analytics for assessing the offer that should be made to a certain customer, to decide on the shipment strategy for each location, to determine the most efficient material flow in a factory, etc.

4.3.12.2 Recommended Knowledge

- Basics of statistical analytics and machine learning

- Basics of database and SQL

- Basics of programming skills, such as R, Python, and Java

- Sanders, N. Big data driven supply chain management: a framework for implementing analytics and turning information into intelligence, Pearson Education, 2014.

4.3.12.3 Usability and Relationship to other Modules

Programming methods, such as R and Python, taught in MSCM-MET-01 Programming in Python and MSCM-MET-03 Programming in R as well as project management concepts taught in MSCM-CO-01 will be applied. Academic writing skills taught in MSCM-CAR-01 facilitate the completion of tasks in this module.

4.3.12.4 Intended Learning Outcomes

No	Competence	ILO
1	Identify	Identify scenarios in supply chain management and evaluate the opportunities and challenges of data analytics applications.
2	Determine	Determine the objective of data analytics in different scenarios and the data sources required to achieve that objective.
3	Apply	Apply methods and tools to collect and integrate data from different sources in the context of supply chain management.
4	Apply	Apply machine learning and statistical analytics methods and tools to uncover hidden patterns, correlations, trends, and knowledge that are useful for improving supply chain management processes.
5	Evaluate	Evaluate data analytics results in different scenarios and solve the problems that might occur throughout the entire data analytics process, from data collection to analysis.
6	Develop	Develop deployment architecture concepts by integrating existing tools/software.
7	Develop	Develop business model and ecosystem concepts.

4.3.12.5 Entry Requirements

Prerequisites	2025-MSCM-MET-01, 2025-MDE-MET-03
Co-requisites	-
Additional Remarks	Programming in Python Introduction to Data Management with Python

4.3.12.6 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Data Analytics in Supply Chain Management	Project Report	2500 words	100	45%	All

4.4 Networking and Communication Area

4.4.1 Leadership Communication

Module Name	**Leadership Communication**
Module Code	2025-MBA-541
Module ECTS	5
Study Semester	Mandatory: 2025-MBA-120-MA 1; 2025-MBA-60-MA 1 Mandatory Elective:
Program Affiliation	2025-MBA-120-MA
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Lecture	35
Independent Study	90
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Learning from Leaders	MBA-541	Lectures	2.5
Communication & Presentation Skills for Executives		Seminar	2.5

4.4.1.1 Module Description

This module offers a unique blend of leadership insights and essential communication skills tailored for an international business environment. It features presentations from CEOs, VPs, successful entrepreneurs, social entrepreneurs, and other inspiring leaders who serve as role models. Through their stories, students will explore diverse leadership practices and the real-world application of management theories, gaining practical insights into effective leadership. Students will engage directly with seasoned leaders, encouraging them to develop personal leadership philosophies influenced by these interactions. The assessment will involve a reflection paper that critiques the talks and insights gained, focusing on lessons learned from the leaders' experiences. In addition to leadership development, the module emphasizes the importance of excellent communication and presentation skills. Students will learn how to communicate effectively with a variety of audiences, often across different languages and cultural backgrounds. The interactive component of the module introduces the basics of effective presentation and communication techniques, enabling students to present themselves, their business projects, or academic work with impact. They will tailor both content and delivery style to resonate with different types of audiences, building rapport and trust while being culturally aware. Overall, this module aims to equip students with the skills necessary to thrive in a global business landscape, combining leadership theory with practical communication strategies.

4.4.1.2 Recommended Knowledge

It is recommended that students research the background and company of each speaker and prepare at least two questions to enhance engagement and deepen learning during the presentations.

4.4.1.3 Usability and Relationship to other Modules

This module complements theoretical courses in leadership and management by providing real-world contexts and examples. It is designed to integrate seamlessly with modules on strategic management, organizational behavior, and ethics, offering students a comprehensive view of leadership in diverse business scenarios.

4.4.1.4 Intended Learning Outcomes

No	Competence	ILO
1	Analyze	Analyze various leadership styles and their effectiveness in different organizational contexts.
2	Reflect	Reflect critically on the leadership approaches discussed and apply these insights to personal leadership development.
3	Demonstrate	Demonstrate an understanding of dynamic leadership challenges and strategies for navigating them effectively.
4	Act	Act as effective communicators – in both group and individual situations.
5	Understand	Understand interpersonal communication models and group dynamics in presentations.
6		Enjoy the process of presenting.
7	Understand	Understand the importance of building rapport and trust with audiences.
8	Use	Use presentation software (PowerPoint, Prezi) confidently and in a visually pleasant way.
9	Learn	Learn how to structure presentations in a coherent manner and develop captivating narratives.
10	Work	Work with different presentation formats (Ignite, Pecha Kucha, Pitching etc.).
11	Understand	Understand and apply the basics of logical reasoning in oratory (deductive/inductive).
12	Develop	Develop oratory and rhetorical skills drawing on Aristotle's teaching of logos, ethos and pathos.
13	Understand	Understand and apply the basics of interpersonal communication (Johari Window, 4-Ears model etc.).
14	Provide	**Provide** and **integrate** constructive feedback to support collaborative learning and professional development
15	Present	Present themselves in different business situations.
16	Collaborate	Collaborate effectively in intercultural teams.

4.4.1.5 Indicative Literature

The module component Learning from Leaders utilizes lecture formats, case studies and interactive presentations, discussions, role play and peer-to-peer coaching. The course will also use internet resources, videos, and home assignments to illustrate and practice leadership styles and specific communication aspects.

4.4.1.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.4.1.7 Assessment and Completion

Components	**Examination Type**	**Duration/Length**	**Weight (%)**	**Minimum**	**ILOs**
Learning from Leaders	Term Paper	2000 words	50	45%	All
Communication & Presentation Skills for Executives	Presentation	15 minutes	50	45%	All

4.4.2 Enterprise Engagement

Module Name	**Enterprise Engagement**
Module Code	2025-MBA-542
Module ECTS	5
Study Semester	Mandatory: 2025-MBA-120-MA 2; 2025-MBA-60-MA 2 Mandatory Elective:
Program Affiliation	2025-MBA-120-MA
Module Coordinator	Sven Voelpel

Student Workload	
Lecture	17.5
Seminar	17.5
Independent Study	90
Hours Total	125

Module Components	**Number**	**Type**	**CP**
Organizational Visits & Cases	MBA-542	Seminar	2.5
Organizational Behavior		Lectures	2.5

4.4.2.1 Module Description

This module bridges academic theory with real-world business practice, focusing on how organizations create value, strategically position themselves, and respond to competitive and environmental pressures. Through company visits, case discussions, and lectures, students will explore key analysis techniques such as Business Model Canvas, SWOT, PESTEL, and VRIO. These tools will be applied to analyze companies and present group insights, fostering analytical thinking, contextual judgment, and communication skills. Students are encouraged to actively engage, view businesses through diverse strategic lenses, and integrate their unique backgrounds into interpreting each visit and case. In addition, the module delves into organizational behavior (OB), examining how people, groups, and organizational structures influence work-related behavior and organizational effectiveness. Students will build a comprehensive model of multilevel interactions—individual, group, and organizational—and explore how these dynamics impact productivity. This model will serve as a foundation for deriving actionable guidelines for personnel selection, performance management, and leadership. The module also addresses contemporary challenges posed by the '3D' megatrends of digitalization, diversity, and demographic change, equipping students with evidence-based approaches to structure and manage organizations in the 21st century. By combining strategic analysis with organizational behavior principles, this module provides students with the tools to critically analyze businesses, develop solutions to leadership and management challenges, and structure organizations effectively in a rapidly evolving global environment.

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4.4.2.2 Usability and Relationship to other Modules

This module complements each MBA module by enabling students to apply theories from strategy, leadership, organizational behavior, marketing, entrepreneurship, and accounting & finance to real business contexts. Each student brings a unique perspective shaped by their experience, background and interests, analyzing visits and cases highly personalized and integrative.

4.4.2.3 Recommended Knowledge

Before the company visits, students are advised to examine the Business Model Canvas, Value Creation frameworks, and specific competitive analysis tools such as SWOT, PESTEL, and VRIO. This preparation will enhance their understanding of business models, industry contexts, and organizational strategies, enabling them to contribute more significantly to in-class presentations and discussions.

4.4.2.4 Intended Learning Outcomes

No	Competence	ILO
1	Analyze	Analyze real-world business practices using concepts of MBA modules' diverse contents.
2	Apply	Apply business modeling tools and value creation frameworks to assess organizational strategies and business models.
3	Use	Use competitive analysis techniques such as SWOT, PESTEL, VRIO, and Blindspot Analysis to evaluate challenges, capabilities, and market dynamics.
4	Synthesize	Synthesize and present strategic recommendations based on field observations and structured analysis, demonstrating clarity, critical thinking, and professionalism.
5	Explain	Explain basic principles of individuals' and groups' behaviours in organisations.
6	Apply	Apply established theories to assessing and predicting behaviour.
7	Describe	Describe core techniques of influencing and modifying behaviour.
8	Discuss	Critically discuss selected approaches to effectively lead employees, teams, and groups.

4.4.2.5 Indicative Literature

- Zairbani, A. and Jaya Prakash, S.K. (2025), "Competitive strategy and organizational performance: a systematic literature review", Benchmarking: An International Journal, 32(1):52- 111.
- https://www.youtube.com/@harvardbusinessreview
- King, D., & Lawley, S. (2019). Organizational Behaviour (3rd ed.). Oxford University Press.

4.4.2.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.4.2.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
Organizational Visits & Cases	Presentation	30 minutes	50	45%	All
Organizational Behavior	Presentation	30 minutes	50	45%	All

4.4.3 Research Colloquium

Module Name	**MBA Research Colloquium**
Module Code	2025-MBA-550
Module ECTS	5
Study Semester	Mandatory: 2025-MBA-120-MA 3 Mandatory Elective:
Program Affiliation	2025-MBA-120-MA
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Lecture and Presentations	28
Independent Study	97
Hours Total	125

Module Components	**Number**	**Type**	**CP**
MBA Research Colloquium	MBA-550	Lectures and Seminars	5

4.4.3.1 Module Description

The "MBA Research Colloquium" serves as a preparatory platform for MBA students, allowing them to develop, present, and refine their research proposals, which could be carried forward into their thesis. The colloquium involves lectures and presentations where students are expected to actively participate and discuss research designs and methodologies, which are critical for their upcoming thesis work.

The educational aim of the colloquium is to equip students with the necessary skills and knowledge to approach their research projects and thesis confidently. This includes understanding how to frame research questions, choosing appropriate methodologies, and effectively presenting and defending their research ideas. The module should foster a supportive environment where students can receive feedback and constructive criticism to refine their research proposals.

The module evaluation will be the student's presentation on a research design that might also be used in their thesis module. Students will participate in lectures and presentations in the module, further develop their research proposals, and present them in class for assessment.

4.4.3.2 Recommended Knowledge

Students are encouraged to familiarize themselves with scientific literature and practice academic writing, particularly structuring abstracts and writing executive summaries of academic writing, by utilizing resources such as Emerald Publish-house's structured abstract writing guides. This preparation will enhance their ability to engage critically and effectively with research content during the colloquium.

4.4.3.3 Usability and Relationship to other Modules

This colloquium is directly related to the MBA thesis modules as it serves as the foundational phase where students prepare and refine their thesis proposals. The skills and knowledge gained in this colloquium are intended to smooth the transition into the thesis modules, ensuring students are well-prepared and their thesis work is built on a solid academic and methodological base.

4.4.3.4 Intended Learning Outcomes

No	Competence	ILO
1	Develop	Develop a detailed research proposal, identifying clear research questions and objectives grounded in the current business administration discourse.
2	Select	Select and justify appropriate research methodologies that align with their research goals, demonstrating an understanding of the strengths and limitations of various research methods.
3	Evaluate	Evaluate and refine research proposals based on feedback from peers and faculty, enhancing the robustness and feasibility of their research.
4	Communicate	**Communicate** research plans clearly and professionally, articulating the significance, anticipated challenges, and expected outcomes in a presentation setting.

4.4.3.5 Indicative Literature

- Paul, J., Lim, W. M., O'Cass, A., Hao, A. W., & Bresciani, S. (2021). Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). International Journal of Consumer Studies, 45(4), 1-16.
- https://www.emeraldgrouppublishing.com/how-to/authoring-editing-reviewing/write-article-abstract

4.4.3.6 Entry Requirements

Prerequisites	-
Co-requisites	-
Additional Remarks	-

4.4.3.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
MBA Research Colloquium	Presentation	30 minutes maximum with Q&A;	100	45%	All

4.5 Thesis

4.5.1 MBA Thesis

Module Name	**MBA Thesis**
Module Code	2025-MBA-590
Module ECTS	30
Study Semester	Mandatory: 2025-MBA-120-MA 4 Mandatory Elective:
Program Affiliation	2025-MBA-120-MA
Module Coordinator	Adalbert F.X. Wilhelm

Student Workload	
Independent Study	750
Hours Total	750

Module Components	**Number**	**Type**	**CP**
MBA Thesis	MBA-590	Thesis	30

4.5.1.1 Module Description

The MBA Thesis module is designed to guide students through the process of formulating, executing, and presenting an extensive research project that addresses a critical issue in business administration. This includes developing a sophisticated understanding of research design, data collection, and the application of statistical analysis tools to draw meaningful conclusions.

Educational aims focus on nurturing a rigorous scientific approach, enhancing students' ability to produce original research that contributes to academic knowledge and practical applications in business.

The module assessment will include three presentations: thesis-title defense, interim reporting, and final defense. In the first session, students will present and defend which title they will research in their graduation thesis.

4.5.1.2 Recommended Knowledge

To effectively prepare for the MBA Thesis, students are encouraged to engage with foundational and advanced business concepts deeply, enhancing their understanding through rigorous academic and industry research. They should attend research seminars, available workshops, and strictly follow MBA Research Colloquium Module. It is important to secure a thesis advisor early in the program to guide their study design and data analysis strategies. Proactive planning, including a detailed timeline and regular consultation, is crucial to manage the research successfully and writing the thesis for the defense exam.

4.5.1.3 Usability and Relationship to other Modules

The MBA Thesis is the pinnacle of the MBA program, integrating and applying all previous coursework to a real-world business problem in a scholarly format. This module not only tests students' ability to conduct independent research but also enhances their potential for leadership roles that require strategic thinking and decision-making based on rigorous analysis. It directly builds on theoretical and practical knowledge acquired in earlier modules, ensuring students are prepared to contribute to business academia or high-level professional practice.

4.5.1.4 Intended Learning Outcomes

No	Competence	ILO
1	Construct	Construct a specific, researchable problem within the field of business administration to provide a foundation for academic investigation.
2	Formulate	Formulate and articulate sophisticated research questions that address critical issues within business administration, demonstrating an advanced understanding of the subject matter.
3	Design	Design and execute a comprehensive research plan that incorporates appropriate data collection and analysis methodologies, ensuring the acquisition of relevant, high-quality data.
4	Analyze	Analyze and interpret research data to derive insights that significantly contribute to academic knowledge and practical business applications.
5	Communicate	Communicate complex research findings to academic and professional audiences, demonstrating mastery in written and oral presentations.
6	Adapt	Adapt and refine research methods based on ongoing feedback to enhance the quality and impact of the research.

4.5.1.5 Indicative Literature

- Bougie, R., & Sekaran, U. (2019). Research methods for business. Wiley & Sons.
- Hair Jr, J., Page, M., & Brunsveld, N. (2019). Essentials of Business Research Methods. Routledge.

4.5.1.6 Entry Requirements

Prerequisites	Students must have taken and successfully passed a total of at least 70 CP
Co-requisites	-
Additional Remarks	-

4.5.1.7 Assessment and Completion

Components	Examination Type	Duration/Length	Weight (%)	Minimum	ILOs
MBA Thesis	Written Thesis	30-60 pages; The Final Defense must be considered successful in completing this module.	75%	45%	All

MBA Thesis	Oral Examination	30 minutes	25 %		All

5 Appendices

5.1 Intended Learning Outcomes Assessment-Matrix

Master of Business Administration					Entrepreneurship and Innovation Management	Accelerator Project I	Applied Project Management	Accelerator Project II	Digital Transformation and Innovation	Accelerator Project III	Agile Leadership and Strategic Management	Customer-centric Mindset & Agile Delivery Management	Digital Business Models and Functions	Transformational Change Management	Big Data Challenge	Data Analytics	Data Mining	Machine Learning	Visual Communication and Data Story Telling	Text Analysis and Natural Language Processing	Business Intelligence	Supply Chain Management and Logistics	Sustainable Cities and Transportation	Advanced Supply Chain Management	Purchasing and Distribution	Data Analytics in Supply Chain Management	Enterprise Engagement	Leadership Communication	MBA Research Colloquium	MBA Thesis
Semester					1	1	2	2	3	3	1	1	2	2	1	1	2	1	2	1	1	1	2	1	1	2	1	1	3	4
Mandatory/Mandatory elective					m	m	m	m	m	m	m	m	m	m	me	me	me	me	me	me	me	me	me	me	me	me	m	m	m	m
Credits					5	10	5	10	5	10	2.5	2.5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	2. 5	2. 5	5	30
	Competencies*																													
Program Learning Outcomes	**A**	**E**	**P**	**S**																										
Analyze and synthesize complex global business and societal challenges by applying interdisciplinary frameworks, theories, and research methods to propose sustainable and scalable solutions	X	X		X	x	x	x	x	x	x			x	x							x	x	x			x	x		x
Lead and transform organizations by fostering high-performing teams, managing change, and navigating uncertainty with agility and resilience	X	X	X		x	x		x	x	x	x		x	x							x			x			x	x	x	x
Design and implement innovative business models by integrating data analytics, AI, and sustainability into strategic and operational planning.	X	X	X	X	x	x	x	x	x	x		x	x		x	x	x	x	x	x	x			x		x			x	x
Evaluate financial data, KPIs, and market intelligence to support strategic decision-making and enhance organizational competitiveness.	X	X				x		x		x					x	x	x	x	x	x	x			x	x	x			x	x
Integrate ethical reasoning, sustainability, and global perspectives into business leadership, ensuring responsible and inclusive decision-making.	X	X	X	X	x	x	x	x	x	x		x	x	x							x	x	x	x	x		x	x	x	x
Analyze market dynamics, customer behaviors, and emerging trends to develop forward-thinking global marketing strategies.	X	X			x	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x	x	x		x	x	x	x	x
Plan and lead digital transformation initiatives, leveraging data, emerging technologies, and change-management strategies to improve organizational performance.	X	X			x	x	x	x	x	x	x		x	x	x	x	x	x		x	x		x	x		x	x	x	x	x
Communicate complex business analyses and strategic recommendations effectively to diverse audiences using persuasive, data-driven storytelling.	X	X			x	x		x	x	x	x	x	x	x	x	x	x	x	x	x		x	x		x	x	x	x	x	x
Demonstrate leadership in interdisciplinary, multicultural environments by applying governance principles, social responsibility, and strategic foresight.	X	X	X	X	x	x	x	x	x	x	x	x	x	x							x					x	x	x	x	x
Conduct, present, and defend an applied master's thesis based on original research, laying the foundation for doctoral studies or professional publication.	X	X	X	X	x				x	x		x	x	x							x	x	x	x	x		x	x	x	x
Assessment Type																														
Written examination																		x				x								
Term paper									x				x												x		x	x		
Essay																														
Project report							x								x	x	x		x	x	x		x	x		x				
Poster presentation																														
Laboratory report																														
Program code																														
Oral examination																														
Presentation						x		x		x	x	x		x													x	x	x	
Practical assessments																														
Project assessments																														
Portfolio assessments					x																									
Thesis																														
Module achievements																														

*Competencies: A-scientific/academic proficiency; E-competence for qualified employment; P-development of personality; S-competence for engagement in society