

INTRODUCTION TO THE COURSE PORTFOLIO IN OPERATIONS MANAGEMENT

Mannheim Master in Management (M.Sc.), Fall 2023

Mannheim | August-29, 2023

Area Operations Management



Welcome to operations management

SUPPLY CHAIN MANAGEMENT



Prof. Fleischmann

<https://www.bwl.uni-mannheim.de/fleischmann/>

PRODUCTION MANAGEMENT



Prof. Stolletz

<https://www.bwl.uni-mannheim.de/stolletz/>

SERVICE OPERATIONS MANAGEMENT



Prof. Schön

<https://www.bwl.uni-mannheim.de/schoen/>

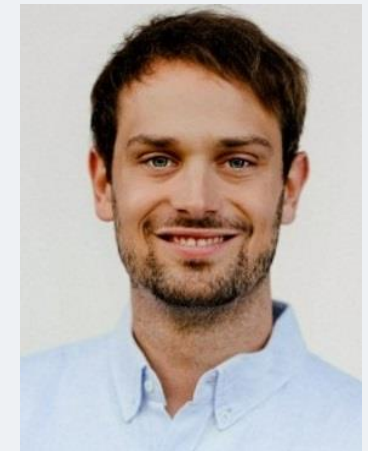
PROCUREMENT



Prof. Bode

<https://www.bwl.uni-mannheim.de/bode/>

OPERATIONS MANAGEMENT (Assistant Prof.)



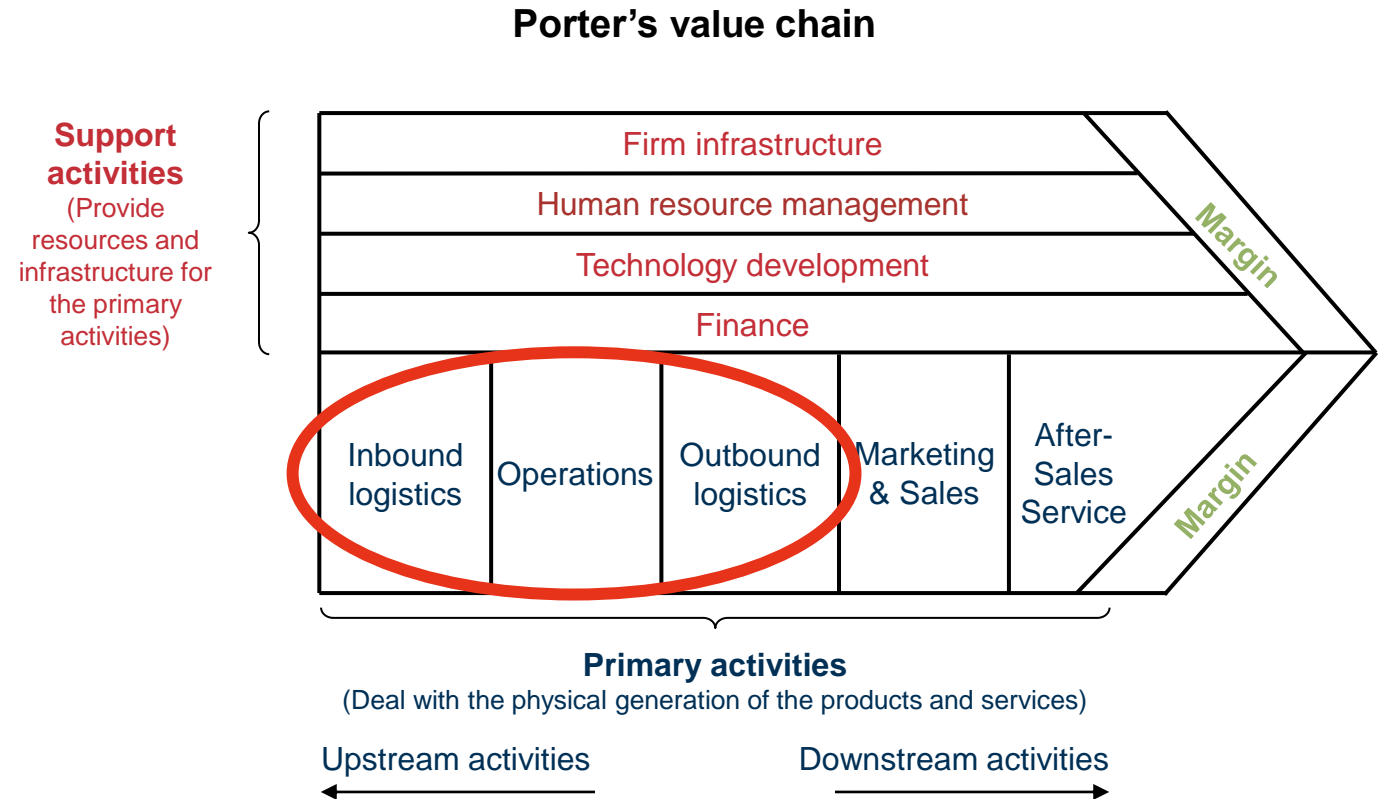
Prof. Glanzer

<https://www.bwl.uni-mannheim.de/glanzer/>

The Role of Operations Management

The heart of doing business: Matching **supply** and **demand!**

- Operations Management is responsible for **creating** and **delivering** a company's **products and services**. In other words, Operations Management is about delivering on the promises made to the customer – and about allowing these promises to be made in the first place.
- The discipline is paramount to the **creation of any business value**. Carefully designed and well executed operations provide an important source of competitive advantage.



Operations and supply chain management as a strategic differentiator

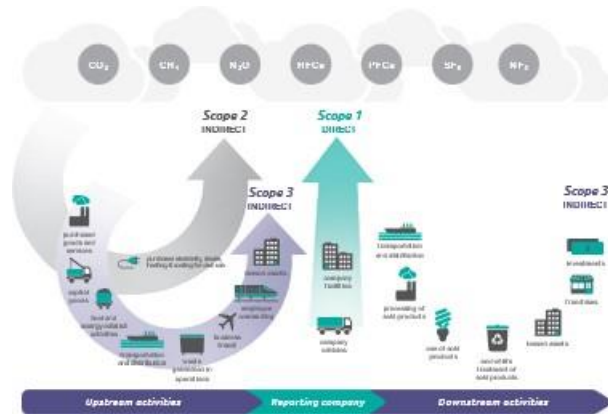
What do these firms have in common?



(just to name a few...)

Some current trends...

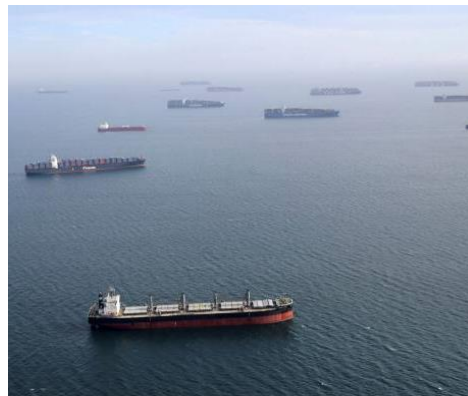
Global crises, supply shortages, and the struggle for sustainability have pushed operations management to the centerstage of business



September 3, 2021, 10:00 AM GMT+2
Forget Finance. Supply-Chain Management Is the Pandemic Era's Must-Have MBA Degree

- The just-in-time inventory systems embraced by many businesses led to empty shelves and costly bottlenecks. That's put a rare spotlight on supply-chain programs, which are attracting more students.

By Matthew Boyle

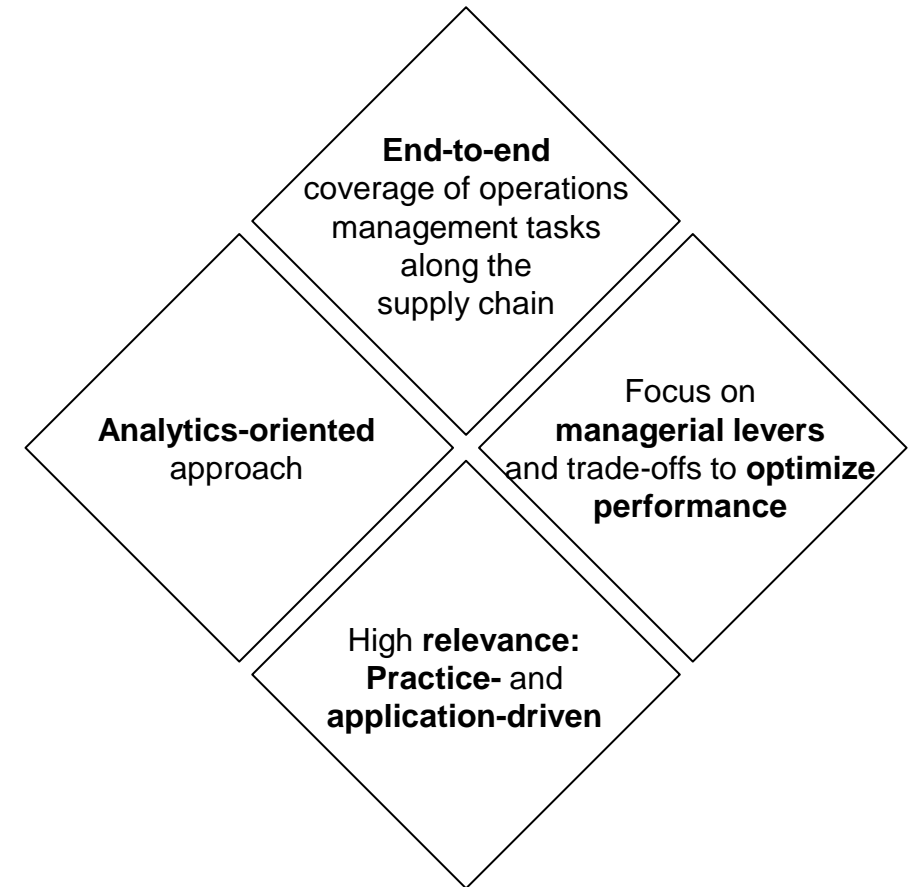


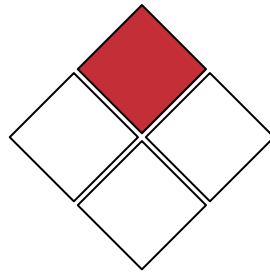
▲ The container ship Ever Given, stuck in the Suez Canal in Egypt on March 27. PHOTOGRAPHER: DOCTUBEV/OBSERVATION SATELLITE/GETTY IMAGES

Our Approach

Operations management in Mannheim builds on four pillars

- Our overall goal is to develop and disseminate knowledge that facilitates better decision-making on managerial levers and trade-offs along the entire supply chain, including logistics, production, service operations, and procurement.
- **Four pillars** characterize our approach:
 - **End-to-end** coverage of operations management tasks along the supply chain
 - Focus on **managerial levers** and trade-offs to **optimize performance**
 - **Analytics-oriented** approach
 - High **relevance: Practice- and application-driven**

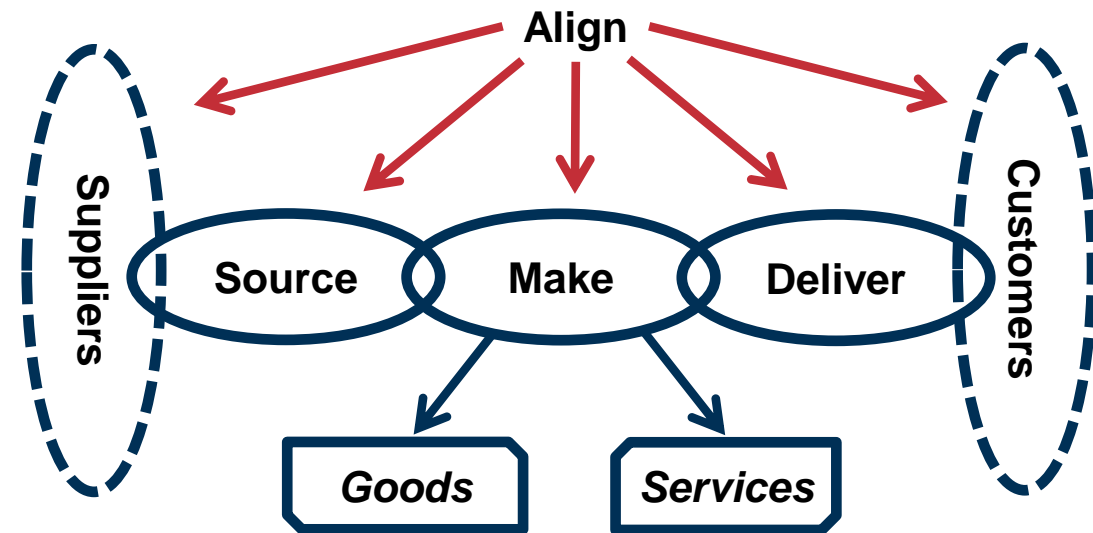




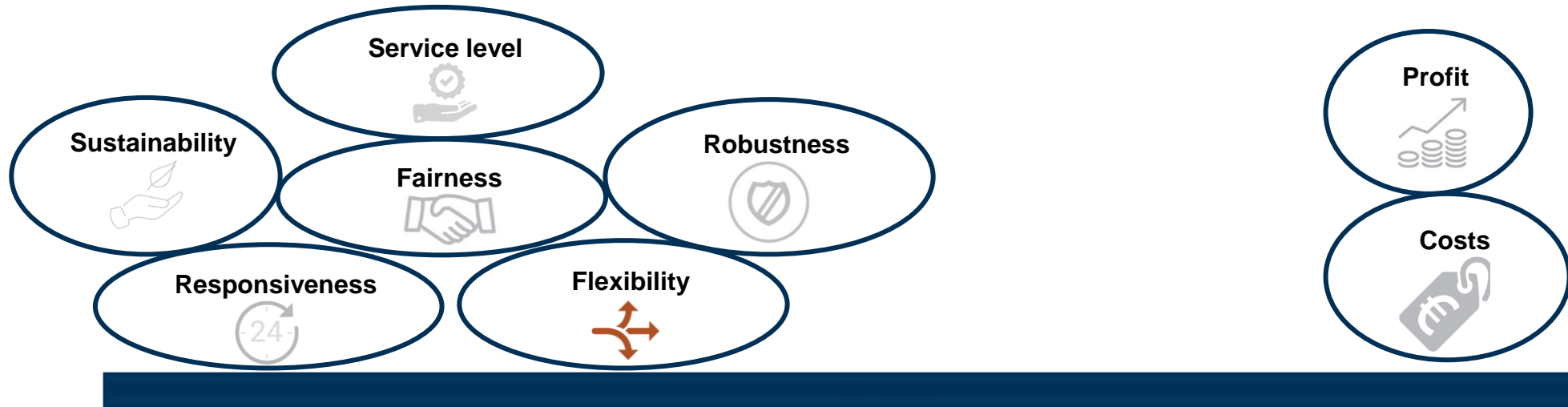
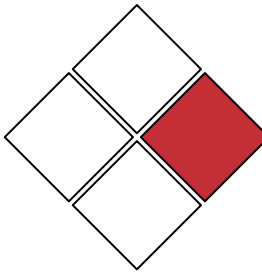
End-to-end coverage of operations management tasks along the supply chain

Our collective **areas of expertise** cover the **full scope** of Operations Management, ranging...

- ...from **sourcing** to **distribution**
- ...from discrete **manufacturing** to process industries
- ...from physical **goods** to **services**
- ...from **focal** company to supply chain **coordination**



Focus on managerial levers and trade-offs to optimize performance



Capacity:

Strategic, proactive, networks, ...

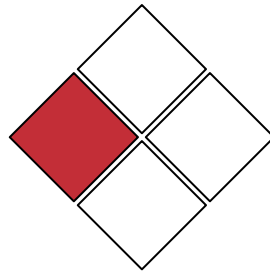
Processes:

Operations concepts, scheduling, lean management, ...

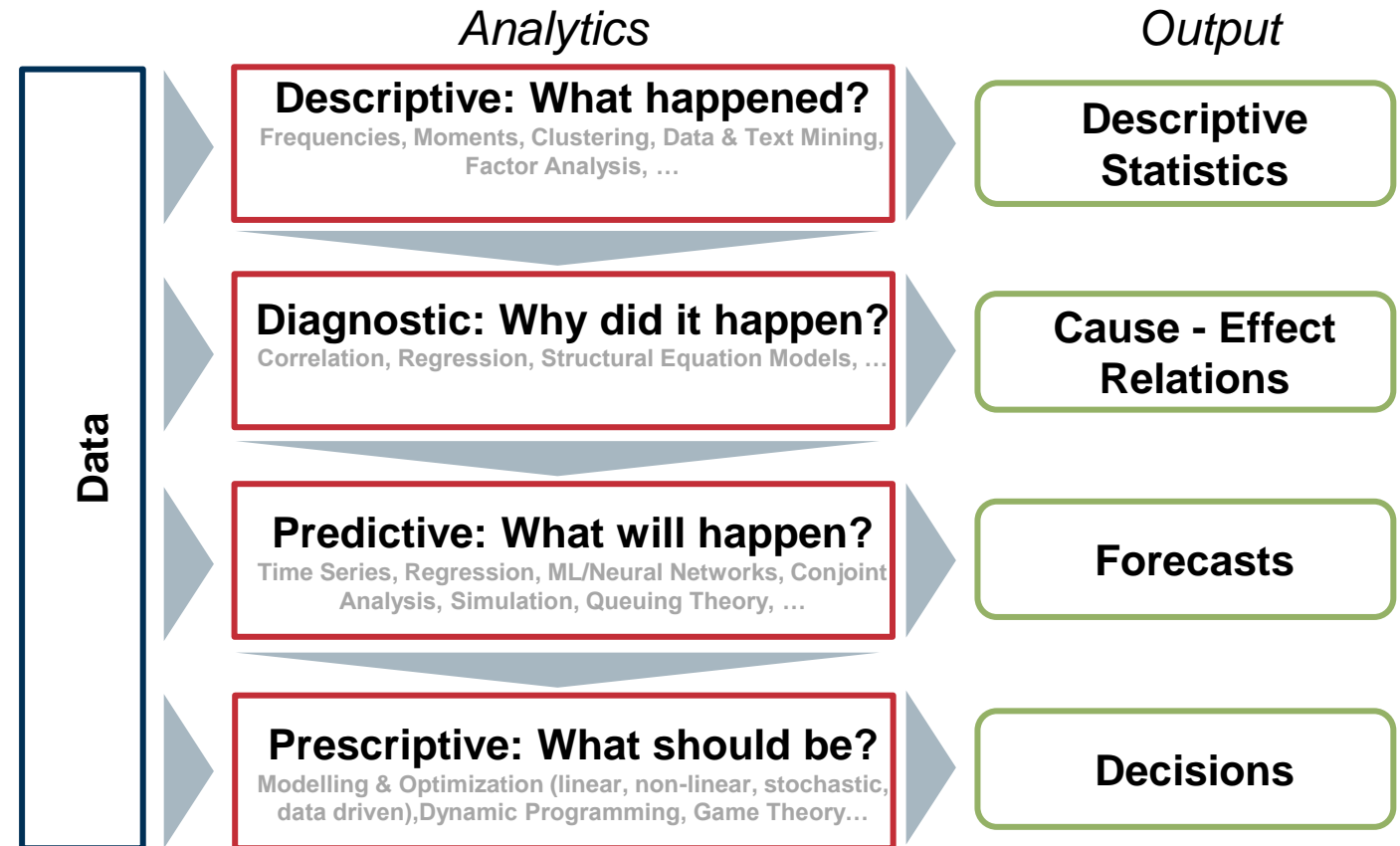
Performance Management:

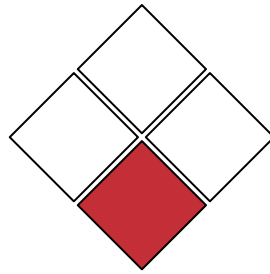
KPIs, revenue management, benchmarks, ...

Analytics-oriented approach



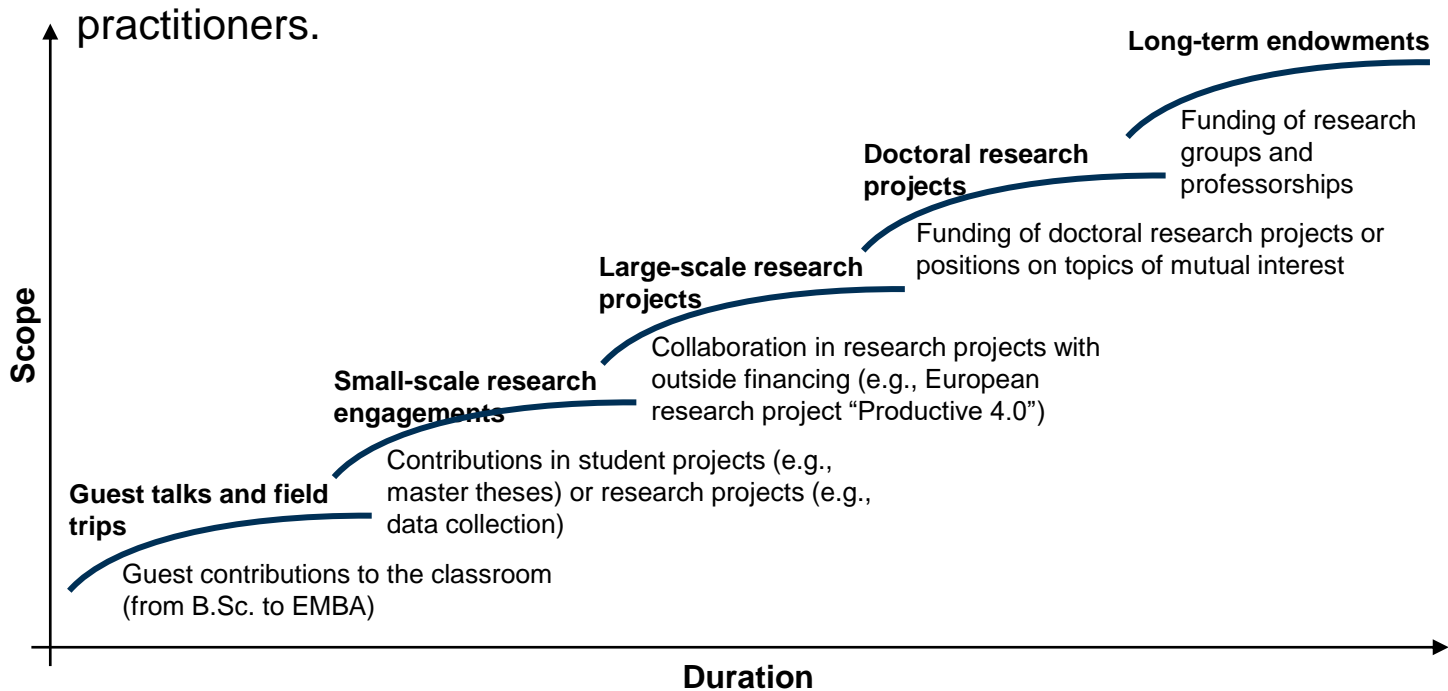
- We address the complexities of **managerial decision making** by means of analytics
- Our expertise includes a wide range of **advanced analytical methods** from the fields of operations research, data science, econometrics, and the social sciences
- We combine **methodological expertise** and **intimate domain knowledge** in relevant areas of operations management
- We see analytics as a means to an end
- We focus on how to **generate value** from data by enabling **better decisions**





High relevance: Practice- and application-driven

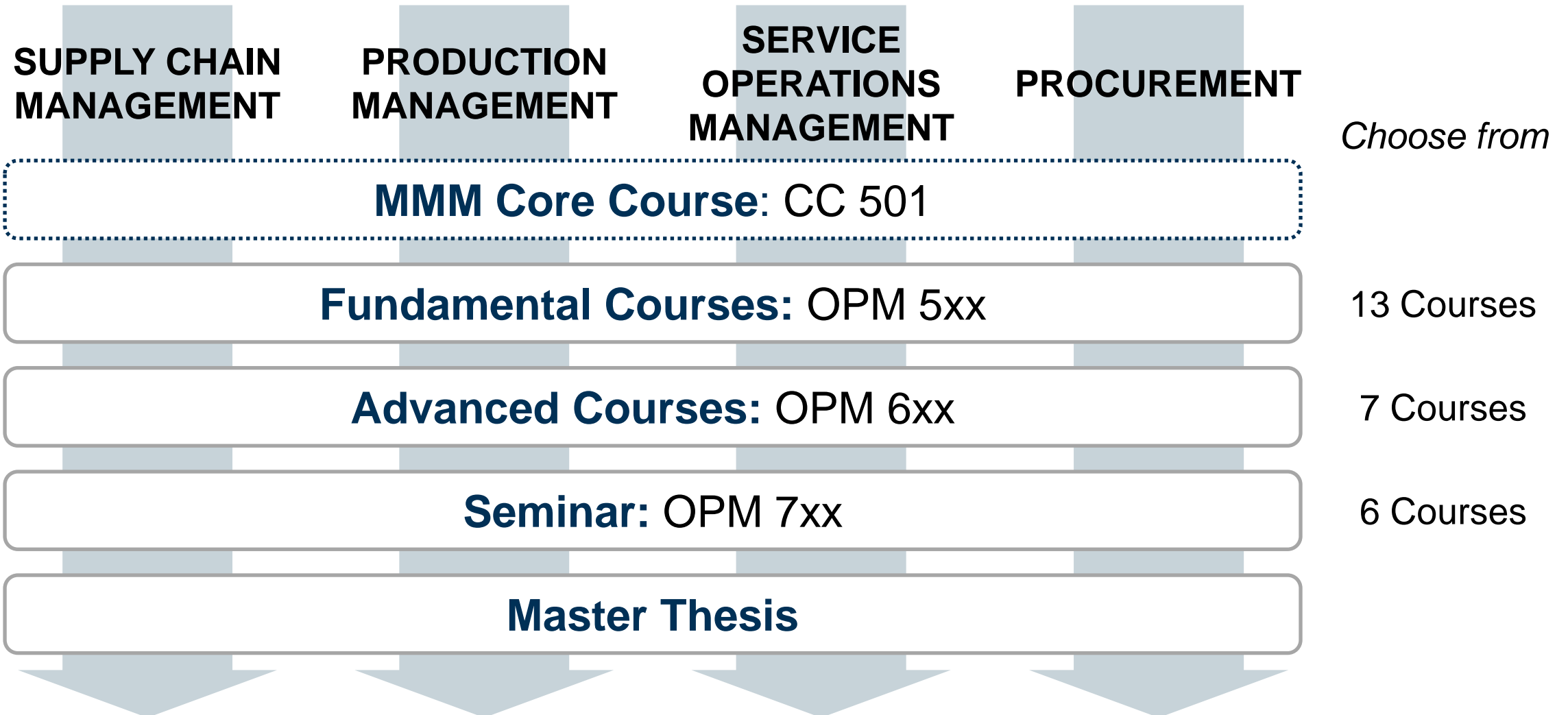
- Practice- and application-driven means that our research and teaching activities are informed by **problems facing the practice of operations management**.
- We collaborate with a **wide range of partners from the corporate world** and provide a **forum for exchange** between faculty, students, and practitioners.



Examples

The 'Examples' section displays a grid of logos for various corporate partners. The logos include: BASF (We create chemistry), BCG, BiLfinger (ENGINEERING AND SERVICES), OMV, CLAAS, DB, Heidelberg Materials, HEIDELBERG, HILTI, McKinsey & Company, PORSCHE, Roche, DAIMLER TRUCK, SAP, and VOLKSWAGEN (AKTIENGESELLSCHAFT).

Program structure



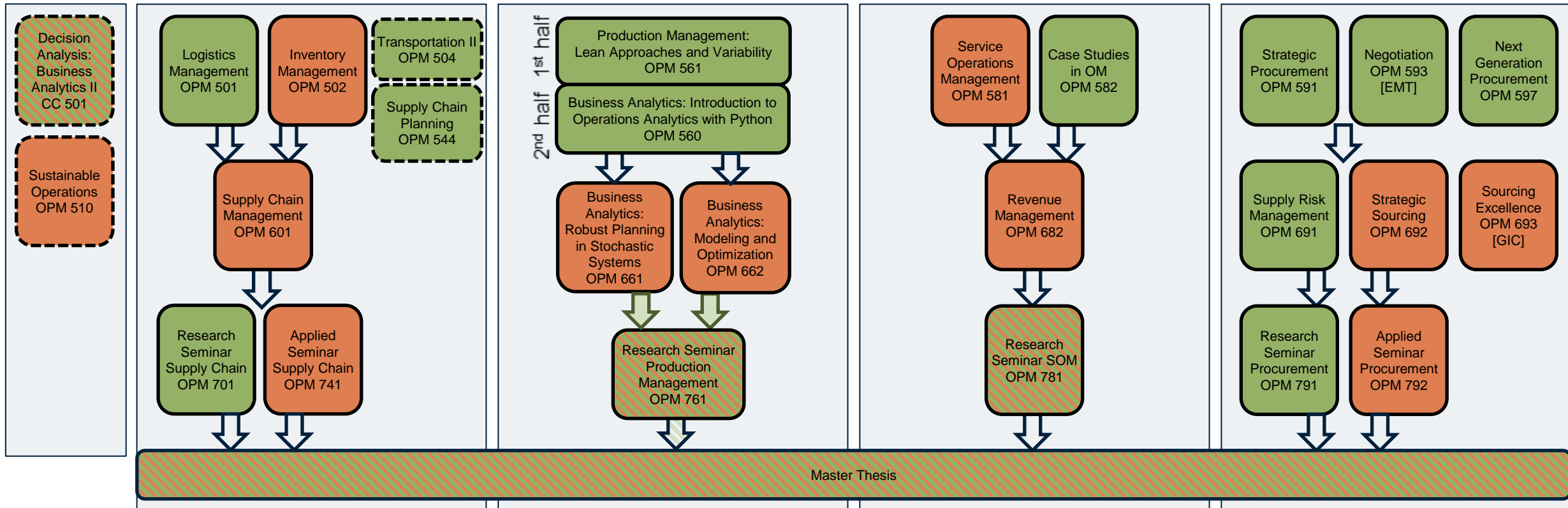
Broad choice and much flexibility

SUPPLY CHAIN MANAGEMENT

PRODUCTION MANAGEMENT

SERVICE OPERATIONS MANAGEMENT

PROCUREMENT



The Chairs and Their Course Offerings

Supply Chain Management

Start OPM 501:
Monday, 4.9., 15:30, O 151

Supply Chain Management is about managing the flow of products and materials along the supply chain to assure availability and serve the customer.

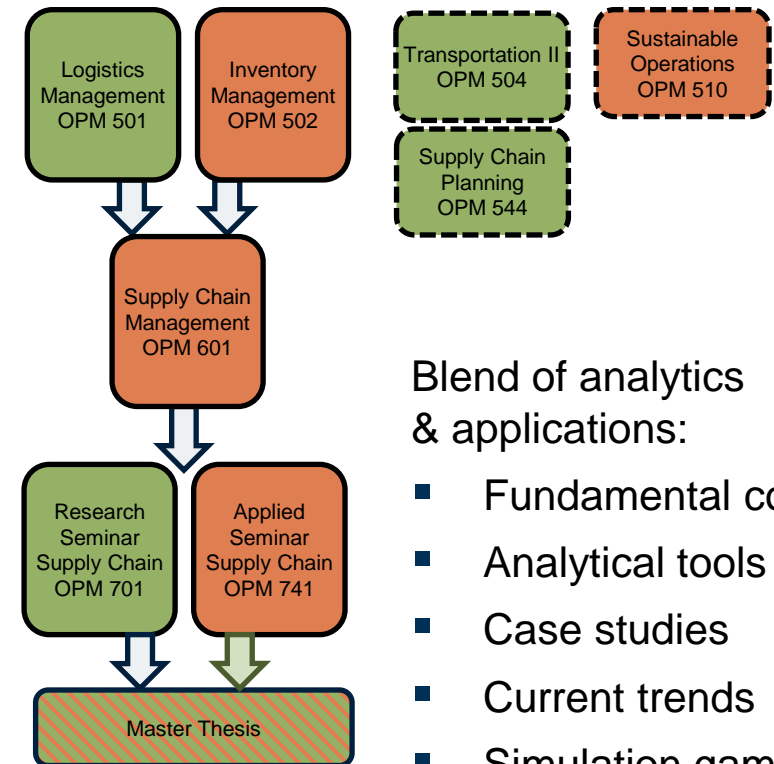
Key processes include:

- **Transportation** of products between different sites and organizations
- Storage of products in **inventory** to assure availability
- **Coordination and alignment** of activities between different supply chain members

Current focal topics at the chair:

- Closed-loop / sustainable supply chains
- Last-mile distribution / e-groceries
- Data-driven supply chain planning
- Inventory management for seasonal products

Course portfolio:



Blend of analytics & applications:

- Fundamental concepts
- Analytical tools
- Case studies
- Current trends
- Simulation games
- Guest lectures

More information: <https://www.bwl.uni-mannheim.de/en/fleischmann/>

Production Management

Production Management is about the design and management of manufacturing capacities.

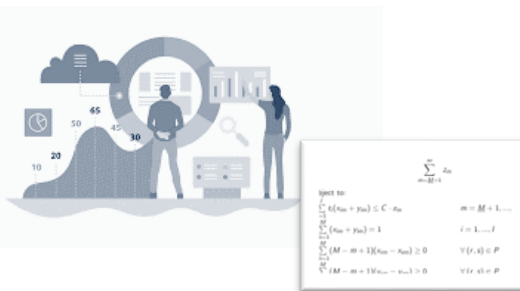
This includes:

- Capacity planning
- Operations planning and scheduling
- Lean management
- Decision support and tools
- Managing uncertainties



Productive 4.0

<https://youtu.be/Hq0HTPrIPGI>



More information: www.bwl.uni-mannheim.de/en/stolletz/teaching/master/

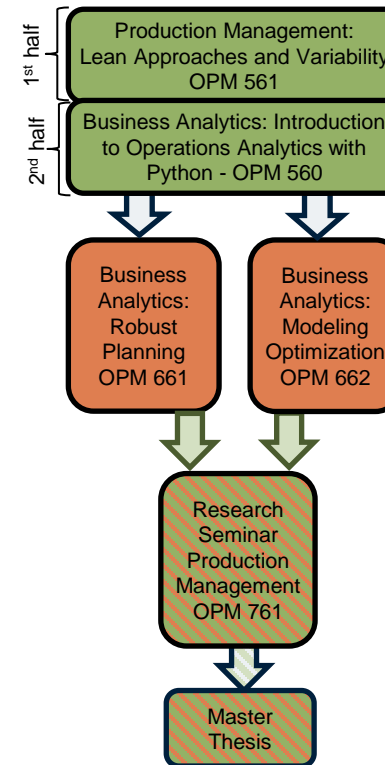
Detailed Chair Introduction:

Wednesday, 6.9., 10:15-11:45

O 145 Heinrich Vetter Hörsaal (Schloss Ostflügel)
(see www.bwl.uni-mannheim.de/en/stolletz/news)

Start OPM 561: Wednesday 6.9.

Course portfolio:



Blend of analytics & applications:

- Fundamental concepts
- Professional analytics tools
- Implementing operations analytics in Python
- Case studies & field trips
- Guest lectures

Service Operations Management

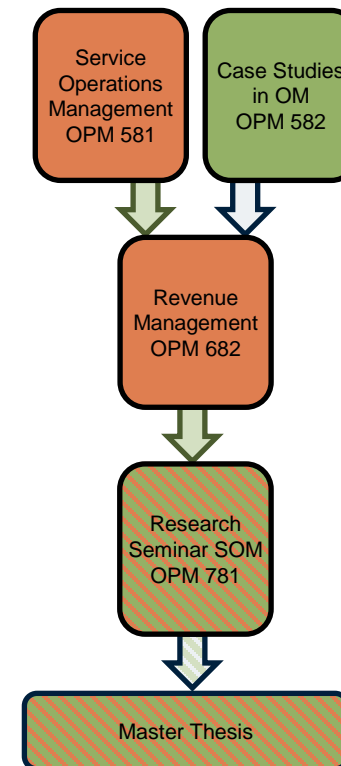
Start OPM 582:
Friday, 8.9., 12:00, [O 226-28](#)

Services pose particular challenges to managers: intangible nature, perishability, customer involvement.

Managing services requires tight integration between operations, marketing, strategy, technology, and organizational issues.

Decisions include

- **Strategic issues** such as the design of service products, processes, networks, sustainability through servitization
- **Tactical and operational issues** such as capacity and revenue management, resource scheduling



Our focus:

- Relevant concepts
- Quantitative modeling and tools
- Data-driven decision making
- Case studies and real applications
- Guest lectures

More information: <https://www.bwl.uni-mannheim.de/schoen/>

Procurement

Procurement is an MBA's dream –
Everything is strategy
and everything is deal!

TheMcKinseyQuarterly

Procurement is about the provision of external resources at the right time, quality, quantity, and cost. This involves:

- **Strategic issues:** Make-or-buy decisions, strategic supply base planning, global vs. local, etc.
- **Tactical issues:** Organize competition in sourcing (negotiation, auctions), category optimization using commercial and technical levers, etc.
- **Operational issues:** Executing the purchase-to-pay process, working capital management, etc.

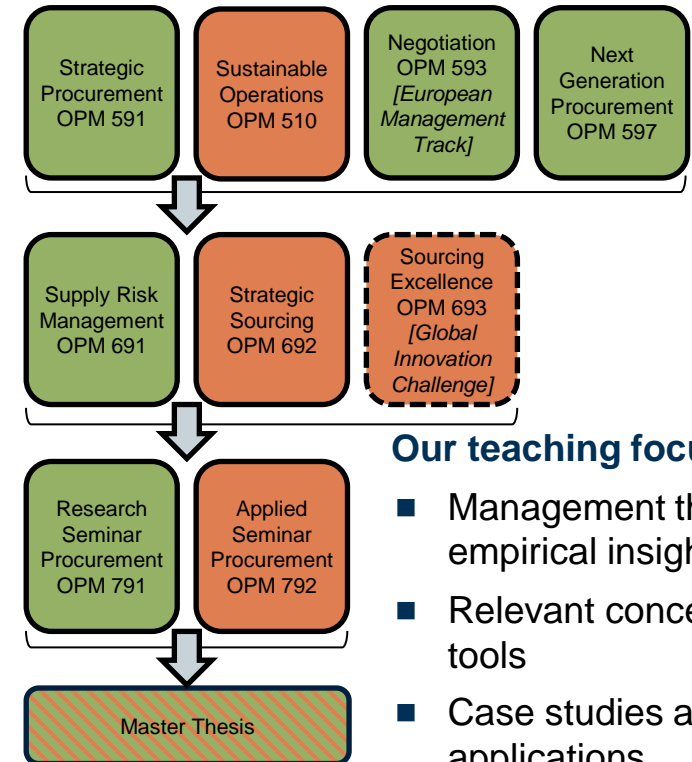
More information: <http://procurement.bwl.uni-mannheim.de> and on [LIAS](#)

Current focal topics at the chair

- Risk, disruptions, and resilience
- Buyer-supplier relationships
- Transparency and visibility
- Sustainability
- Innovation and entrepreneurship
- Software procurement
- Digitalization and the future of procurement

Detailed intro: **Monday, Sept-05, 13:45, O 151** [OPM 591]
Start OPM 591: **Monday, Sept-04, 13:45, O 151**
Start OPM 593: **Tuesday, Sept-05, 08:30, O 135**
Start OPM 597: **Friday, Sept-29, 08:30, O 129**
Start OPM 691: **Thursday, Sept-07, 10:15, O 129**

Course portfolio



Our teaching focus:

- Management theory and empirical insights
- Relevant concepts and tools
- Case studies and industry applications
- Strong connections with practice

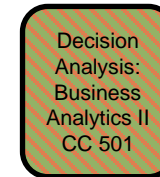
Operations Management (Assistant Prof.)

Operations Management is about designing and managing the processes of producing and delivering goods and services.

Applications are very diverse, including:

- **Scheduling** of energy production
- **Managing** portfolios of financial products
- **Capacity control** for limited resources
- **Managing** water systems

Course portfolio:



- Prescriptive Analytics
- Modeling and solving complex decision problems
- ❑ Using spreadsheet models and the MS Excel solver
- Optimal decision making when all parameter values are known
- Optimal decision making under uncertainty

More information: <https://www.bwl.uni-mannheim.de/en/glanzer/>

Graduating in Operations Management

Planning your study program

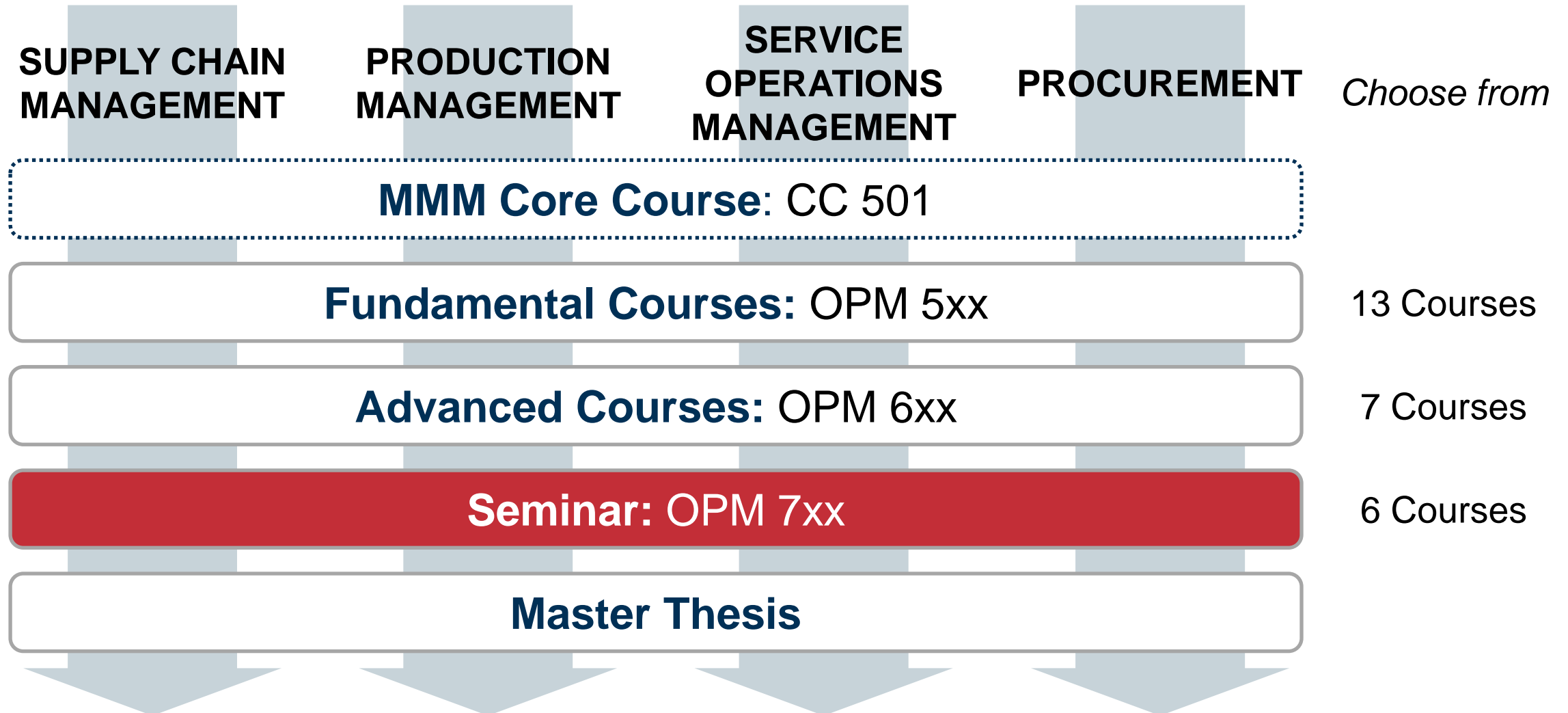
Many opportunities to **customize**:

- Wide range of course offerings, covering the full domain of operations management
- Flexibility to combine courses across chairs
- Flexibility to complement portfolio with courses from other areas
- Flexibility to fit in semester abroad or internship

⇒ **Design your own study program!**

⇒ **Important element: Seminars OPM 7xx**

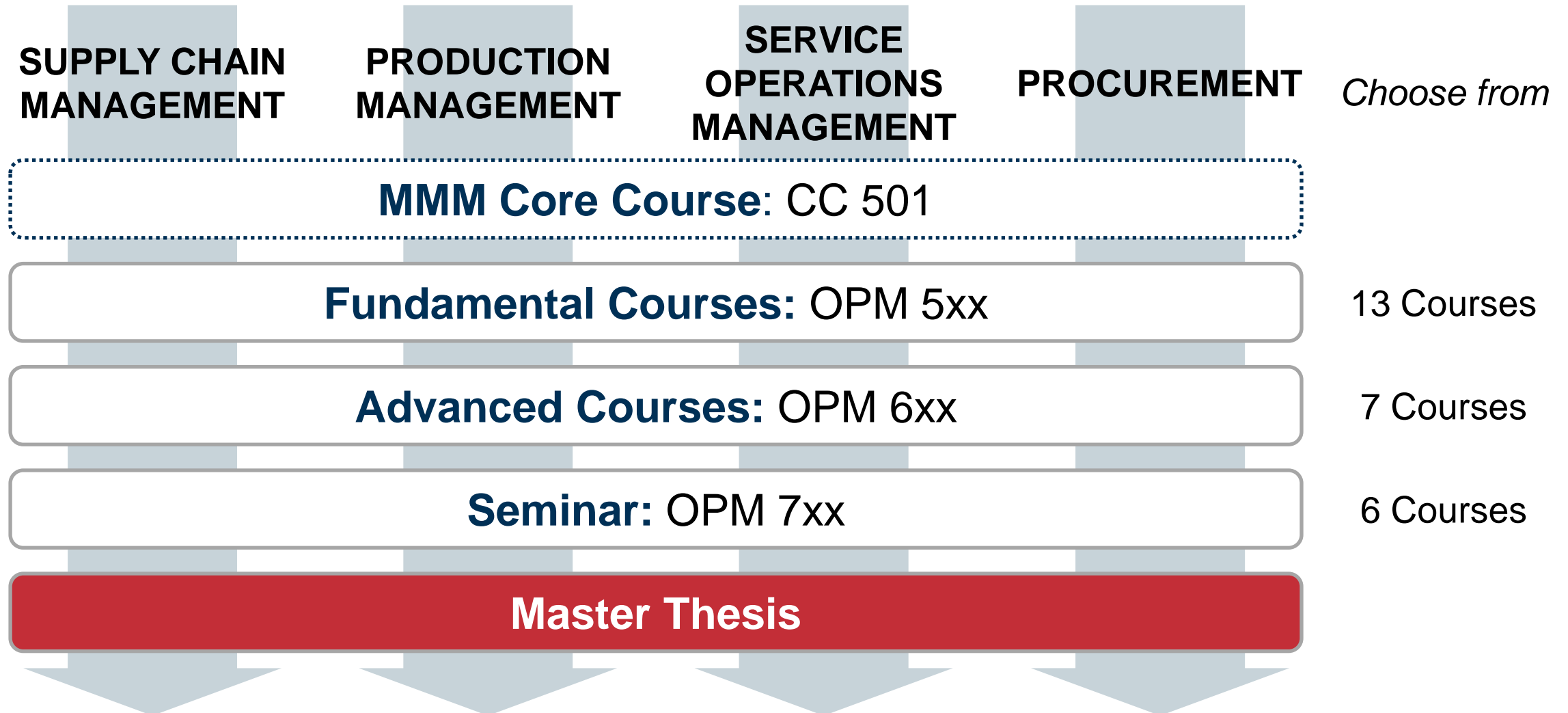
Program structure



Seminars (OPM 7xx)

- Goal: Preparation for Master Thesis
- Insight into scientific literature
- Selection of current topics in operations management
- Two types:
 - **Research Seminar:** Literature based and/or quantitative analysis (all chairs)
 - **Applied Seminar (OPM 741 / 792):** In collaboration with companies
- **Admission:**
 - Application at end of each term (details see home pages)
- **Requirements:**
 - At least one module OPM 6xx

Program structure



Master thesis

- Participants write their master thesis at one of the chairs of area, depending on the attended **core courses**.
- **Requirements:**
 - At least one course OPM 7xx and one course OPM 6xx
- **Starting date:** Any
- Application by e-mail (see chairs' homepages)
- **Topics:**
 - Different topics offered by each chair (see homepages)
 - Practice-oriented topics welcome (in cooperation with a company)

In both cases: Own suggestions possible (to be coordinated)

Master thesis: Examples of research-oriented topics

■ Optimization studies

- Demand-management for online-grocery
- Artificial intelligence approaches for the performance evaluation of operations systems

■ Theoretical / conceptual modeling

- Supply chain management and the circular economy
- Fairness in operations management

■ Quantitative empirical research

- Empirical investigation of innovativeness in buyer-supplier relationships using archival data
- An analysis of financial distress of suppliers in the Automotive industry

■ Qualitative empirical research

- Case studies on sustainable sourcing

■ Field research

- Impact of Climate Change on Supply Chains

■ Literature studies

- Research opportunities for resilient post-COVID-19 supply chains
- Planning and management of production ramp-ups

Master thesis: Examples of in-company topics

- Strategic and tactical distribution planning in the sugar industry: Case Study at **Südzucker**
- Influencing Factors of Inventory Management: A Case Study on the European Parts Distribution Centre of **John Deere**
- Implementation of an Online Delivery Service in Retail Grocery Industry – Case Study at **REWE**
- Enhanced demand forecasting with predictive analytics (with **BASF**)
- Revenue Management and Price Optimization at **Deutsche Bahn**
- Inventory Reduction through VMI – A Case Study at **Procter & Gamble**
- Simulation-based Slot Scheduling of Truck Handling Operations at the **Lufthansa Cargo** Hub in Frankfurt
- Supervised learning approaches for yield prediction in semiconductor manufacturing (with **Bosch**)
- Simultaneous Ramp-up & Allocation Planning in the Automotive Industry at **Daimler**



JOHN DEERE



Lufthansa Cargo
The business to business class.



BOSCH

DAIMLER

Career outlook

- The qualifications you gain with our courses open a wide range of career options in industry, consulting, and academia.
- Starting positions of our alumni are for example:

- Trainee
- Supply Chain Planner
- Consultant
- Account manager
- Project controller
- Procurement manager
- PhD Student
- ...





MSCS

Mannheim Supply Chain Students

Mannheim Supply Chain Students

Accredited student initiative of the University of Mannheim

Introduction Fall Term 2023



UNIVERSITÄT
MANNHEIM



Dein Netzwerk für Einkauf,
SCM und Logistik

HOCHSCHULGRUPPE
Universität Mannheim



Why you should join MSCS



You can take responsibility from the first day

- We are a rather small initiative so everyone can contribute
- Help organizing company events, become creative by creating flyers & social media posts, or plan social events



Expand your network and boost your career

- We organize various events with our corporate partners
- Field trips, workshops, guest talks, ...



And most importantly: Have fun!

- Meet fellow students who are also interested in Operations Management
- Our social events are a highlight in every semester

Coming up this semester ...



... and more!

Let's stay in touch!



Join our WhatsApp group
to stay up to date ...

... and participate in our kick-off!



Tuesday, September 12, at 7 p.m.



Schloss, room tbd



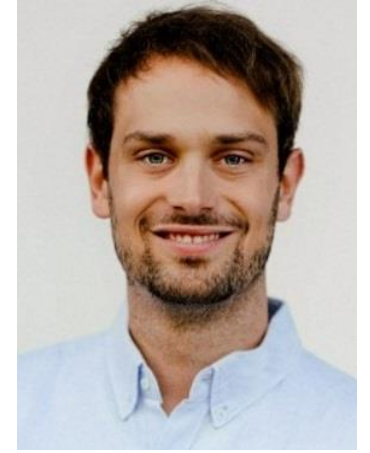
- Get to know the initiative
- Learn more about upcoming events
- Language: English

More information

- More information on specific courses: Chair home pages + student portal
- Course companion sites on e-learning platform ILIAS:
 - Detailed schedules
 - Announcements
 - Class material: Slides, readings, spreadsheets,...
 - ➔ Register for the courses you would like to attend

Questions?





See you soon in Operations!

<http://www.bwl.uni-mannheim.de/operations>