

Module Description Quantitative Management Methods & Value Chain Management

Identifier	Category	Details / Content
General Information		
1.1	Module name	Quantitative Management Methods & International Value Chain Management
1.2	Contained courses	a) Quantitative Management Methods (QMM) b) Intentional Value Chain Management (IVCM)
1.3	Module code	MSB.2.0124.0.V.1 (IVCM) (3 ECTS) MSB.2.0124.0.V.2 (QMM Seminar) (3 ECTS) MSB.2.0124.0.V.3 (QMM Tutorium) (without credits)
Timing		
2.1	Frequency of offer	Winter semester
2.2	Attend in which semester	in 1st. semester (for first semester students) in 2nd. Semester (for second semester students) Incoming students
Link to study programs		
3.1	Offered in study program	Master International Marketing and Sales
3.2	Mandatory courses in module or Electives	Mandatory
Workload		
4.1	Lecture form a) QMM	Seminarian lessons
	Lecture form b) VCM	Seminarian lessons
4.2	Contact time a) QMM	2 semester weekly hours = 30 hours per semester
	Contact time b) VCM	2 semester weekly hours = 30 hours per semester
4.3	Self-study time a) QMM	60 hours per semester
	Self-study time b) VCM	60 hours per semester
4.4	Total workload	180 hours
4.5	Workload in credits	6 ECTS
Intended learning outcomes & learning content		
Intended learning outcomes a) QMM		
	ILO QMVCM 1	Graduates have the ability to apply the acquired specialist knowledge to practical problems.
	ILO QMVCM 2	Graduates can critically reflect on the problems for which subject-specific methods and systems can be used and the conditions under which they can be used.












Contribution of module ILOs to study programme ILOs
(only most relevant contribution is highlighted)



A1: apply knowledge and take decisions



K2: think analytically, and critically

5.1	ILO QMVCM 3	Graduates can present their results in a targeted manner.		S1: manage effectively intercultural communication
	ILO QMVCM 4	Graduates can classify quantitative management standard software tools and critically evaluate their uses.		K2: think analytically, and critically
	ILO QMVCM 5	Graduates can apply empirical research methods.		K3: conduct rigorous research
	ILO QMVCM 6	Graduates can use and evaluate forecasting models to optimize decision-making.		A1: apply knowledge and take decisions
	ILO QMVCM 7	Graduates can use multivariate analysis techniques to solve business problems.		A1: apply knowledge and take decisions
	ILO QMVCM 8	Graduates can discuss digital business models.		S1: manage effectively intercultural communication
	ILO QMVCM 8	Graduates can develop a multivariate analysis in Python		D1: apply digital competences for virtual work
Intended learning outcomes b) IVCM				
5.1	ILO QMVCM 9	Graduates can explain challenges in international corporate networks and the relationship between departments' behaviour, company strategy and supply chain strategy.		K1: effectively acquire knowledge in international marketing & sales
	ILO QMVCM 10	Graduates can apply selected methods and tools of supply chain design and planning, evaluate their effectiveness and efficiency in terms of cost, time, quality and sustainability		A1: apply knowledge and take decisions
	ILO QMVCM 11	Graduates can discuss supply chain trends and how they influence design and planning decisions.		K2: think analytically, and critically
	ILO QMVCM 12	Graduates are able to research knowledge in specific aspects of supply chain management independently and apply this knowledge to an exemplary company case.		K3: conduct rigorous research
Learning content a) QMM				
5.2	Learning content 1	Introduction to Quantitative Analyses		
	Learning content 2	Empirical research methods		
	Learning content 3	Segmentation methods		
	Learning content 4	Multiple forecasting models		
	Learning content 5	Digital business models		
Learning content b) IVCM				
5.2	Learning content 6	Basic concepts of supply chain management		
	Learning content 7	Supply chain strategy and design and its relation to company and other functional strategies		
	Learning content 8	Distribution network and transport planning		
	Learning content 9	Logistics Optimization in Dimensions of Costs, Time, Quality and Sustainability		
Requirements & examination				
6	Participation requirement	Content: Basic knowledge of univariate and multivariate statistics and market research, basics of project management and business process management		
7.1	Requirements for the award of credit points	Passed module (min. 50% of points)		

7.2	Assessment method a) QMM	Assignment
7.2	Assessment method b) IVCM	Assignment
7.3	Requirements for admission to the examination	
7.4	Importance of the mark for total mark	5% (6 ECTS of 120 ECTS)
8.1	Lecture language	English
8.2	Module supervisor	Prof. Dr. Reiner Kurzhals
8.3	Lecturers	Prof. Dr. Reiner Kurzhals Prof. Dr. Michael Dircksen, Junior Professor Dr. Sandra Wissing
8.4	Maximum number of participants	
8.5	Supplementary information	
Recommended reading QMM		
Reiner Kurzhals, Wiley-Schnellkurs Statistik, 2015, Wiley Verlag		
Thomas Haslwanter: An Introduction to Statistics with Python, 2022, Springer Verlag		
Backhaus u.a.: Multivariate Analysemethoden, 15. Auflage, 2025, Springer Verlag		
Recommended reading IVCM		
Bozarth, Cecil C.; Handfield, Robert B. (2016): Introduction to Operations and Supply Chain Management. Fourth edition, global edition. Essex, England: Pearson		
Chopra, Sunil; Meindl, Peter (2016): Supply chain management. Strategy, planning, and operation. Sixth edition, global edition. Boston, Columbus, Indianapolis, New York, San Francisco, Amsterdam, Cape Town, Dubai, London, Madrid, Milan, Munich, Paris, Montréal, Toronto, Delhi, Mexico City, São Paulo, Sydney, Hong Kong, Seoul, Singapore, Taipei, Tokyo: Pearson (Always learning).		
Christopher, Martin (2011): Logistics & Supply Chain Management. Fourth edition. Harlow: Pearson Education Limited.		
Gudehus, Timm (2004): Logistik. Grundlagen - Strategien - Anwendungen. 2., aktualisierte und erw. Aufl. Berlin: Springer (Engineering online library).		
Lambert, Douglas M.; Burduroglu, Renan (2000): Measuring and Selling the Value of Logistics. In: Int Jnl Logistics Management 11 (1), S. 1–18. DOI: 10.1108/09574090010806038		
Ohno, Taiichi (2014): Toyota production system. Beyond large-scale production. London: CRC Press.		
Pfohl, Hans-Christian		
Porter, Michael E. (2010): Wettbewerbsvorteile. Spitzenleistungen erreichen und behaupten = (Competitive Advantages). 7. Aufl.		
Schulte, Christof (2013): Logistik. Wege zur Optimierung der Supply Chain. 6. Aufl. München: Franz Vahlen (Vahlens Handbücher der Wirtschafts- und Sozialwissenschaften).		
Thonemann, Ulrich (2005): Operations Management. München u.a.: Pearson (Wi Wirtschaft).		

