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Module Catalog

Bachelor's degree (BA)

Mobility and Public Transport Management (MPM)

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List of Abbreviations

General abbreviations:

SWS	Contact hours (45 min. each) per week
CP	Credit points according to the European Credit Transfer System (ECTS)

Course type:

V	Lecture
Ü	Exercise course
L	Lab
P	Project assignment
S	Seminar
B	Supervision

Forms of examination*:

KL	Written exam with duration: KL30 = 30 min., KL60 = 60 min., KL90 = 90 min.
MP	Oral examination
RE	Paper and presentation
HA	Term paper
EA	Experimental work
ED	Creation and documentation of computer programs
PA	Project work
PR	Presentation
SA	Thesis
SP	Examination during the term
BA	Bachelor's Thesis
MA	Master's Thesis
KO	Defense

* A plus sign (+) indicates that all of the specified types of examinations are part of the module examination, and a slash (/) indicates that alternatively one of the specified types of examinations constitutes the module examination.

1. Term 1

MPM 1 Introduction to Business Administration

No: MPM 1	Mandatory module: Introduction to Business Administration	Language: German		Credit points: 6	
		Frequency: each fall term		Term: 1	
		Workload: 180 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 60 hrs.	Self-study hours: 120 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Introduction to Business Administration		Prof. Dr. Trost		V+Ü	3+1
This module is used for the following degree programs: MPM, WMV					
Contents					
<ul style="list-style-type: none"> - Subject and classification of business administration - Basic terms, fundamental concepts and principles of business administration - Corporate objectives, corporate governance and management processes, human resources and personnel management - Business management instruments/management tools - Constitutive decisions: choice of legal form and location of the company, form of organization, business combinations and mergers - Operational service creation processes in procurement, production and marketing, overview of internal and external accounting 					
Learning objectives and competencies to be imparted					
<p>The module teaches students basic interrelations in business administration. After a classification of business administration, the students know the basic terms of business administration and fundamental concepts and principles and apply them correctly in relation to constitutive decisions and service creation processes. They develop an understanding of operational decision-making processes. Furthermore, students learn and understand the basic concepts and fundamentals of corporate management and human resources management as well as functions of management and are able to assess corporate goals and target relationships. They critically examine business management concepts and their application limits. In addition, a brief overview of financial management, internal and external accounting is provided. Based on exemplary tasks, the students deal with some of the above-mentioned topics, develop solutions independently, assess the quality of the solutions, and discuss their transferability.</p>					
Literature and teaching aids					
Extensive lecture notes (will be provided as PDF files)					
Jung, H. (2016): Allgemeine Betriebswirtschaftslehre, München, 13th edition, Berlin, Boston					
Neus, W. (2013): Einführung in die Betriebswirtschaftslehre aus institutionenökonomischer Sicht, 8th edition, Tübingen					
Schierenbeck, H., Wöhle, C. B. (2016): Grundzüge der Betriebswirtschaftslehre, 19th edition, Munich					
Schultz, V. (2014): Basiswissen Betriebswirtschaft, Management, Finanzen, Produktion, Marketing 5th edition, Munich.					

Selchert, F.W., Greinert, M. (2002): Einführung in die Betriebswirtschaftslehre, Übersichtsdarstellungen, 8th edition, Munich

Straub, Th. (2014): Einführung in die Allgemeine Betriebswirtschaftslehre, 26th 2014 edition, Halbergmoos

Thommen, J.-P. / Achleitner, A.-C. (2017): Allgemeine Betriebswirtschaftslehre. Umfassende Einführung aus managementorientierter Sicht, 8th ed. edition, Wiesbaden:

Wöhe, G./ Döring, U. (2016): Einführung in die Allgemeine Betriebswirtschaftslehre, 26th edition, Munich.

MPM 2 Economics and Private Business Law

No: MPM 2	Mandatory module: Economics and Private Business Law	Language: German		Credit points: 9	
		Frequency: each fall term		Term: 1	
	Prerequisites for participation:	Workload: 270 hrs.		Form of examination: KL90	
Contact hours: 90 hrs.		Self-study hours: 180 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Economics (Microeconomics and Macroeconomics)		Dipl.-Kfm Wiljes		V+Ü	3+1
Private Business Law				V	2
This module is used for the following degree programs: MPM and WMV					
Contents					
<u>Economics (Microeconomics and Macroeconomics):</u>					
<ul style="list-style-type: none"> - Methods of economic theory formation and economic thinking - Division of labor, economic systems and orders - Fundamentals of the theory of supply and demand in the presence of full competition - Determinants and elasticities of supply and demand - Introduction to budgetary and business theory - Equilibrium solutions in goods markets with functioning competition - Market regulations (state intervention and welfare) - Market types, price formation and corporate behavior in the presence of imperfect competition - Market failures (public goods, externalities, ...) - Basic macroeconomic relationships (economic cycle, basic features of national accounting, distribution of income and wealth, government and public budget, public debt, business cycle and growth, ...) - Introduction to macroeconomic theories - Basic features of the macroeconomic goods market, the money market and the labor market - Interaction of goods, money and labor markets - Economic policy intervention options - Foreign trade and international economy 					
<u>Private Business Law:</u>					
<ul style="list-style-type: none"> - Fundamentals and concepts of law; separation of powers - Structure of the BGB, case handling and subsumption, principle of abstraction, subjects and objects of law - Declaration of intent; contract; defects of the legal transaction; representation (including procurator and power of attorney), condition; time limits and statute of limitations - Concept and origin of the obligation; performance obligations, time and place; involvement of third parties; compensation for damages (types, scope and calculation); liability for vicarious agents; termination of the obligation; default in the obligation, liability for breach of contract, contract with protective effect in favor of third parties - General terms and conditions - Fundamentals of the law of commercial enterprises (concept of merchant and types of merchants, commercial company and register) 					
Learning objectives and competencies to be imparted					
<u>Economics (Microeconomics and Macroeconomics):</u>					

Students gain a basic understanding of economic relationships and master the central terminology. They learn how to use economic theories and models, but they are also able to critically question their validity in individual cases.

The central learning objective of this module is a basic understanding of how markets work. The focus is on microeconomic relationships and behavioral patterns in goods markets. Students will be able to analyze markets, assess the framework conditions and power relations, and thus estimate the consequences of individual economic measures.

Knowledge of the most important macroeconomic relationships (e.g. interaction of goods, money and labor markets) enables students to understand and assess macroeconomic developments and their effects. The central problems and the most important economic policy instruments to combat them are known. Students recognize the importance of macroeconomic developments for companies and households and can assess the extent of economic interdependencies with foreign countries.

The acquired knowledge of individual and macroeconomic contexts enables students to better classify further contents of the degree program and thus contributes to a better overall understanding.

Fundamentals of Private Business Law:

Knowledge of the basics of law, BGB general part, general law of obligations and commercial law as well as the concepts, knowledge, contexts and skills (especially subsumption technique/expert opinion style) to solve practical cases

Literature and teaching aids

Economics (Microeconomics and Macroeconomics):

- Bartling, H., Luzius, F., Fichert, F. (2019): Grundzüge der Volkswirtschaftslehre. Einführung in die Wirtschaftstheorie und Wirtschaftspolitik, 18th edition, Vahlen, Munich
- Blanchard, O., Illing, G. (2017): Makroökonomie, 7th edition, Pearson Studium, Munich.
- Brunner, S., Kehrle, K. (2014): Volkswirtschaftslehre, 3rd edition, Vahlen, Munich
- Krugman, P., Wells, R. (2017): Volkswirtschaftslehre, 2nd edition, Schäffer-Poeschel, Stuttgart
- Mankiw, G., Taylor, M.P. (2018): Grundzüge der Volkswirtschaftslehre, 7th edition, Schäffer-Poeschel, Stuttgart
- Samuelson, P.A., Nordhaus, W.D. (2016): Volkswirtschaftslehre. Das internationale Standardwerk der Makro- und Mikroökonomie, 5th edition, FinanzBuch-Verlag, Munich
- Varian, H. (2016): Grundzüge der Mikroökonomie, 9th edition, De Gruyter Oldenbourg, Berlin, Boston.

Private Business Law:

Slide sets and assignment sheets

- Führich, E. R.: Wirtschaftsprivatrecht, current edition, Franz Vahlen, Munich; also available via campus license.
- Klunzinger, E.: Einführung in das Bürgerliche Recht, current edition, Vahlen, Munich (subject to change of publisher); also available via campus license.
- Müssig, P.: Wirtschaftsprivatrecht, current edition, C.F. Müller, Heidelberg
- Oetker, H.: Handelsrecht, current edition, Springer, Berlin, Heidelberg, campus license only.
- Wörten, R.; Metzler-Müller, Karin: BGB AT: mit Einführung in das Recht, current edition, Franz Vahlen, Munich.
- Wörten, R.; Metzler-Müller, K.: Schuldrecht AT, current edition, Franz Vahlen, Munich.
- Wörten, R.; Metzler-Müller, K.: Schuldrecht BT, current edition, Franz Vahlen, Munich.

MPM 3 Mathematics and Statistics

No: MPM 3	Mandatory module: Mathematics and Statistics	Language: German		Credit points: 9	
		Frequency: each fall term		Term: 1	
		Workload: 270 hrs.		Form of examination: KL90	
	Prerequisites for participation:	Contact hours: 90 hrs.	Self-study hours: 180 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Mathematics and Statistics		TBD		V+Ü	4+2
This module is used for the following degree programs: LOM, LOP, MPM					
Contents					
Logic, set theory, numbers, sums, equations, inequalities, linear systems of equations and inequalities, combinatorics, sequences, series, functions, differential and integral calculus of a real variable, discussion of curves, simple numerical methods...					
Learning objectives and competencies to be imparted					
Upon completion, students will have a good basic knowledge of mathematics and statistics. Students are able to apply quantitative methods to simple business logistics problems so that they can understand the content of the following advanced courses.					
Literature and teaching aids					
Lecture notes and exercises					
Courant R.: Differential- und Integralrechnung vol. 1 and 2, current edition					
Precht, M./ Voit, K./ Kraft R.: Mathematik für Nichtmathematiker vol. 1 and 2, current edition					
Precht, M./ Voit, K./ Bachmeier M.: Angewandte Statistik vol. 1, current edition					
Von Mangoldt, H./ Knopp, K.: Einführung in die höhere Mathematik vol. 1-3, current edition					
Smirnow W. I.: Lehrgang der höheren Mathematik vol. 1 and 3/1, current edition					
Various authors: Mathematik für Ingenieure, Naturwissenschaftler, Ökonomen und Landwirte vol. 1,2,3,12 and 21/1					
Wörle, K./ Kratz, J./ Keil K.-A.: Infinitesimalrechnung, current edition					

MPM 4 Bookkeeping and Accounting

No: MPM 4	Mandatory module: Bookkeeping and Accounting	Language: German		Credit points: 6	
		Frequency: each fall term		Term: 1	
		Workload: 180 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 60 hrs.	Self-study hours: 120 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Bookkeeping and Accounting		Prof. Dr. Czenskowsky		V+Ü	3+1
This module is used for the following degree programs: LOM, LOP, LIM and MPM					
Contents					
<ul style="list-style-type: none"> - Fundamentals and principles of external (and internal) accounting - History and legal framework - Inventory and stocktaking - Balance sheet structures - Management of balance sheet, profit and loss and mixed accounts - Profit and loss account and statement - Accounting policies - Accounting for selected assets and liabilities - Balance sheet and performance indicators 					
Learning objectives and competencies to be imparted					
<p>The module teaches students basic interrelations in business administration. Completion of the module will result in proficiency with external accounting terminology for companies in the transportation industry. Students will be able to stocktake and create an inventory, record business transactions and derive a balance sheet and profit and loss account. Furthermore, a balance sheet can be designed taking into account the company's policy and analyzed using key figures.</p>					
Literature and teaching aids					
Lecture notes					
Buchner, R. (2005): Buchführung und Jahresabschluss, 7th edition, Vahlen, München					
Buchholz, R. (2013): Grundzüge des Jahresabschlusses nach HGB und IFRS, 8th edition Vahlen, München					
Coenenberg, A. (2014): Jahresabschluss und Jahresabschlussanalyse, 23rd edition, Schäffer-Poeschel, Stuttgart.					
Eberhardt, M./Egger, N./ Weckbach, M. (2014): Rechnungswesen Spedition und Logistikdienstleistung, 15th edition, Winklers Verlag, Braunschweig					
Eisele, W./ Knobloch, A. P. (2018): Technik des Betrieblichen Rechnungswesens, 9th edition, Vahlen, München					
Heinhold, M. (2012): Buchführung in Fallbeispielen, 12th edition, Schäffer-Poeschel, Stuttgart.					
Meyer, C./ Teile, C. (2018): Bilanzierung nach Handels- und Steuerrecht, 29th edition, NWB-Verlag, Herne.					

2. Term 2

MPM 5 Transport Industry and Mobility

No: MPM 5	Mandatory module: Transport Industry and Mobility	Language: German		Credit points: 6	
		Frequency: each spring term		Term: 2	
		Workload: 180 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 124 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Transport Industry and Mobility		Prof. Dr. Trost		V+Ü	3+1
This module is used for the following degree programs: LOM, LOP, LIM, MPM, WMV					
Contents					
<ul style="list-style-type: none"> - Basics, technical terms and basic interrelationships of the transport industry, in general and with regard to the mode of transport - Structure, importance and development of the transport sector (statistical coverage of mobility and transport, longitudinal and cross-sectional comparisons, forecast) - Internal and external developments in the transport sector, background on mobility - Transportation policy regulatory framework, service and cost structures - Lines of development of national and EU transport policy - Markets, organizational structures and competitive conditions in the transport sector, including new mobility services - Basic approaches to pricing and infrastructure policy - Mobility recording, causes of mobility - Possibilities and strategies for influencing mobility and traffic 					
Learning objectives and competencies to be imparted					
<p>After the course, students will know the basic facts of the transportation industry and they will be able to confidently use the terminology and apply it to similar contexts and in other subjects. Students will have a broad basic knowledge of the entire transportation and traffic sector in an inter-company perspective. Current developments can be described, causes and backgrounds identified and analyzed and applied to developments that are forecast. The framework conditions in passenger and freight transport are mastered and the current market and competitive conditions of transport companies in the various submarkets are known, both in a national and in an EU-wide/international context. After having acquired the basics of mobility recording and causes of mobility, students are able to assess and critically question possibilities for influencing mobility and traffic and to formulate independent proposals.</p>					
Literature and teaching aids					
<p>Extensive lecture notes (will be provided as PDF files)</p> <p>Aberle, G. (2009): Transportwirtschaft, 5th edition, Munich</p> <p>Bichler, K. et. al. (2017): Kompakt-Lexikon Logistik, 3rd edition, Wiesbaden</p> <p>Grandjot, H.-H/ Bernecker, T. (2014): Verkehrspolitik – Grundlagen, Funktionen und Perspektiven für Wissenschaft und Praxis, Hamburg</p>					

Hölser, Th. (Eds.; 2016): Lorenz 1. Leitfaden für Spediteure und Logistiker in Ausbildung und Beruf: Grundlagen der Verkehrswirtschaft, Spedition & Logistik, Speditions- und ... Kombiniertes Verkehr, Lagerung & Distribution, 25th edition, Hamburg

Krampe, H; Lucke, H.-J., Schenk, M. (2012): Grundlagen der Logistik – Einführung in die Theorie und Praxis logistischer Systeme, 4th edition, Munich

Kummer, S. (2018): Einführung in die Verkehrswirtschaft, 3rd edition, Stuttgart

Nobis, C./ Kuhnimhof, T. (2018): Mobilität in Deutschland – MiD Ergebnisbericht. Studie von infas, DLR, IVT und infas 360 im Auftrag des Bundesministers für Verkehr und digitale Infrastruktur, Bonn, Berlin. www.mobilitaet-in-deutschland.de

MPM 6 Procurement, Production and Marketing

No: MPM 6	Mandatory module: Procurement, Production and Marketing	Language: German		Credit points: 6	
		Frequency: each spring term		Term: 2	
		Workload: 180 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 124 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Procurement, Production		Dipl.-Kfm Wiljes		V	2
Introduction to Marketing				V+Ü	1+1
This module is used for the following degree programs: MPM					
Contents					
<u>Procurement, Production:</u>					
<ul style="list-style-type: none"> - Process structures and value creation in the company - Economic and logistical basics of procurement - Goals and organizational forms of procurement - Program- and consumption-oriented determination of demand - Sourcing strategies, supplier selection and management, - Order quantity, dates and policy - Organization and process types of manufacturing - Basics of production theory - Tasks in production management - Production planning and control - Features of service production - Design of service processes - Current trends in procurement and production 					
<u>Introduction to Marketing:</u>					
<ul style="list-style-type: none"> - Basic terms and concepts of marketing - Introduction to consumer behavior - Market segmentation and positioning - Tasks and elements of the marketing concept - Marketing research (analysis and forecasting) - Marketing goals and strategies - Marketing mix (product, price, distribution and communication policy) - Features of services marketing - Current trends and developments in marketing 					
Learning objectives and competencies to be imparted					
<u>Procurement, Production:</u>					
Students will recognize the value-creating character of procurement and production and will be able to assess the importance of performance management functions in companies in the transport industry as well. They are familiar with the basic range of tasks involved in procurement and can select suitable procurement strategies in a targeted manner. In addition, they are made aware of the importance of supplier management and can derive appropriate supplier care measures depending on the situation.					

Students will be able to analyze individual production requirements and select appropriate approaches. They are able to identify optimization approaches in production in both industrial and service companies. Students will be able to explain the theoretical concepts of service management as well as evaluate the practical challenges.

They know the most important trends and developments in procurement and production and can assess and evaluate their consequences.

Introduction to Marketing:

Students will recognize the importance of marketing and master key terminology. They will be able to segment markets and develop initial positioning approaches within the framework of case studies.

They are familiar with the elements of the marketing concept and know different methods of analysis as well as the most important marketing strategies and instruments. They have the ability to select or assign these in a targeted manner and to apply them.

They are familiar with the institutional characteristics of marketing and are able to specifically consider service-specific requirements.

Literature and teaching aids

Procurement, Production:

Corsten, H./ Gössinger, R. (2016): Produktionswirtschaft. Einführung in das industrielle Produktionsmanagement, 14th edition, De Gruyter Oldenbourg, Berlin, Boston.

Haller, S. (2017): Dienstleistungsmanagement. Grundlagen, Konzepte, Instrumente, 7th edition, Springer, Wiesbaden.

Kummer, S./ Grün, O./ Jammerneegg, W. (2019): Grundzüge der Beschaffung, Produktion und Logistik, 3rd ed., Pearson, Hallbergmoos

Schierenbeck, H. (2016): Grundzüge der Betriebswirtschaftslehre, 19th edition, De Gruyter Oldenbourg, Berlin, Boston.

Wannenwetsch, H. (2014): Integrierte Materialwirtschaft, Logistik und Beschaffung, 4th edition, Springer Vieweg, Berlin.

Wöhe, G./ Döring, U./ Brösel, G. (2016): Einführung in die Allgemeine Betriebswirtschaftslehre, 26th edition, Vahlen, Munich

Introduction to Marketing:

Becker, J. (2019): Marketing-Konzeption. Grundlagen des zielstrategischen und operativen Marketing-Managements, 11th edition, Vahlen, Munich

Bruhn (2019): Marketing. Grundlagen für Studium und Praxis, 14th edition, Springer Gabler, Wiesbaden

Kotler, P./ Armstrong, G./ Harris, L., Piercy, N. (2019): Grundlagen des Marketing, 7th ed., Pearson, Hallbergmoos

Kotler, P./ Bliemel, F. (2017): Marketing-Management. Konzepte - Instrumente - Unternehmensfallstudien, 15th edition, Pearson, Hallbergmoos

Meffert, H./ Bruhn, M./ Hadwich, K (2018): Dienstleistungsmarketing. Grundlagen – Konzepte – Methoden, 9th edition, Springer, Wiesbaden.

MPM 7 Cost Accounting and Cost Management

No: MPM 7	Mandatory module: Cost Accounting and Cost Management	Language: German		Credit points: 6	
		Frequency: each spring term		Term: 2	
		Workload: 180 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 124 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Cost Accounting and Cost Management		Prof. Dr. Czenskowsky		V+Ü	3+1
This module is used for the following degree programs: LOM, LOP and MPM					
Contents					
<ul style="list-style-type: none"> - Relationship between external and internal accounting - Overview of internal accounting - Basics of cost accounting and cost accounting systems - Full and partial cost accounting - Cost element accounting - Cost center accounting and internal activity allocation - Unit costing/calculation - "Classic" and "modern" cost unit time accounting 					
Learning objectives and competencies to be imparted					
<p>Based on the previous course Bookkeeping and Accounting, this module teaches students further basics of business thinking. Completion of the Cost and Activity Accounting module will result in proficiency with internal accounting terminology. Students understand the importance of structured and meaningful cost accounting to manage a transportation company and create internal transparency. They will learn the structures of internal accounting, be able to identify and calculate main cost types, create cost centers and correctly assign costs to cost objects. In the cost management part of the course, students learn to independently apply procedures of internal activity allocation, costing and short-term profit and loss accounting and to assess their practical significance. The relevant business vocabulary is learned and applied in practical cases.</p>					
Literature and teaching aids					
Lecture notes					
Czenskowsky, T./ Schünemann, G./ Zdrowomyslaw, N. (2010): Fundamentals of Controlling, 3rd edition, Deutscher Betriebswirte Verlag, Gernsbach					
Däumler, K./ Grabe, J. (2013): Kostenrechnung 1 Grundlagen, 11th edition, NWB-Verlag, Herne.					
Däumler, K.; Grabe, J. (2013): Kostenrechnung 2 Deckungsbeitragsrechnung, 10th edition, NWB-Verlag, Herne.					
Friedl, G./ Hofmann, C./ Pedell, B. (2013): Kostenrechnung, 2nd edition, Vahlen, München					
Heinhold, M. (2010): Kosten- und Erfolgsrechnung in Fallbeispielen, 5th edition, Schäffer-Poeschel, Stuttgart.					
Jórasz, W. (2009): Kosten- und Leistungsrechnung, 5th edition, Stuttgart					
Kilger, W./ Pampel, J./ Vikas, K. (2012): Flexible Plankostenrechnung und Deckungsbeitragsrechnung, 13th edition, Gabler, Wiesbaden					
Olfert, K. (2010): Kompakt-Training Kostenrechnung, 6th edition, Kiehl-Verlag, Ludwigshafen					

Plötner, O./ Sieben, B./ Kummer, T. (2010): Kosten- und Erlösrechnung, 2nd edition, Springer, Berlin Heidelberg

MPM 8 Academic and Social Skills

No: MPM 8	Mandatory module: Academic and Social Skills	Language: German		Credit points: 2 (5)	
		Frequency: each fall term		Term: 2	
		Workload: 60 hrs.		Form of examination: PR+HA	
	Prerequisites for participation:	Contact hours: 28 hrs.	Self-study hours: 32 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Academic Skills and Methods		Dipl.-Ök. Anja Borchers		S	1
Conflict Management				S	1
This module is used for the following degree programs: MPM					
Contents					
<p><u>Academic Skills:</u> Definition and meaning of scientific work, types of scientific work, literature research, topic identification, hypothesis formation, outline creation, structure of scientific work, content-related and formal guidelines (e.g. citation style, text design, creation of lists)</p> <p><u>Conflict Management:</u> Definition, development and course (escalation stages) of conflicts, causes of conflicts (especially communication and perception), criteria for appropriate appreciation and criticism, types of conflicts in the company (backgrounds and characteristics), conflict resolution strategies, technique and course of a conflict resolution discussion between employees or employees and supervisors (theory and role play), strategies to prevent the development or escalation of conflicts</p>					
Learning objectives and competencies to be imparted					
Students acquire important academic and social skills for later professional and management tasks.					
<p><u>Academic Skills:</u> Students learn basic principles of scientific work. They acquire content-related and methodological knowledge of scientific work in order to be able to produce their own scientific work correctly, i.e. they are able to work on a topic or a problem according to scientific standards and principles.</p> <p><u>Conflict Management:</u> Participants in this module will acquire basic skills in conflict management. They can recognize conflicts and their causes at an early stage and select an appropriate conflict resolution strategy according to the escalation level. In addition, they learn to lead conflict discussions.</p>					
Literature and teaching aids					
<p><u>Academic Skills:</u> Esselborn-Krumbiegel, H. (2017): Richtig wissenschaftlich schreiben: Wissenschaftssprache in Regeln und Übungen, 5th edition, Paderborn: UTB GmbH</p> <p>Stickel-Wolf, C. (2016): Wissenschaftliches Arbeiten und Lerntechniken: Erfolgreich studieren - gewusst wie!, 8th edition, Wiesbaden: Springer Gabler Verlag</p>					

Theisen, M. R. (2017): Academic Skills: Erfolgreich bei Bachelor- und Masterarbeit, 17th edition, Munich.
Vahlen Verlag

Conflict Management:

Freitag, S./ Richter, J. (Hrsg.) (2019): Mediation – das Praxisbuch: Denkmodelle, Methoden und Beispiele, 2nd revised edition, Weinheim, Basel: Beltz Verlag

Glasl, F. (2013): Konfliktmanagement, Ein Handbuch für Führungskräfte, Beraterinnen und Berater, 11th updated edition, Bern: Haupt Verlag

Rosenberg, M. B. (2016): Gewaltfreie Kommunikation, 12th revised and expanded edition, Paderborn:
Junfermann Verlag

Schwarz, G. (2014): Conflict Management: Konflikt erkennen, analysieren, lösen, 9th edition, Wiesbaden:
Springer Gabler

MPM 9 Passenger Transport Management

No: MPM 9	Mandatory module: Passenger Transport Management	Language: German		Credit points: 5	
		Frequency: each spring term		Term: 2	
		Workload: 150 hrs.		Form of examination: KL60 / MP	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 94 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Passenger Transport Management		Prof. Dr. Trost		V+Ü	3+1
This module is used for the following degree programs: MPM					
Contents					
<ul style="list-style-type: none"> - Basic terms and basic interrelationships in passenger transport - Quantitative recording of the traffic volume in passenger transport - Institutional framework and legal basis for MIV and in public transport, SPNV and air transport as well as new forms of services such as car-sharing and their impact on business decisions - Market and competitive structures in passenger transport (public transport, regional rail transport and air transport as well as new mobility services) - Vehicles in road and rail-based public transport, aircraft types and designs, stations and infrastructures - Mobility, (new) mobility services and mobility costs - Specifics of the management of passenger transport companies - Deepening of current topics 					
Learning objectives and competencies to be imparted					
<p>The students know special terminology and basic contexts of passenger transport. They are able to name the various submarkets of passenger transport and the different framework conditions and to deal with them in a differentiated manner. Basic knowledge of the legal, institutional and managerial framework of public transport, regional rail transport and air transport will be acquired. Building on this, students will be able to assess the specifics of managing passenger transportation companies in various areas such as organization, procurement, production, marketing, internal and external accounting. A basic understanding of the nature of vehicles, equipment and infrastructure in passenger transport is developed. They will also be able to assess operational decisions in passenger transport companies in the context of the framework conditions and market structures. Knowledge of these conditions forms the basis for a customer-oriented design of the various offers and the derivation of promising products and efficient forms of operation. New mobility services (car-sharing, car-pooling, etc.) and their business models are presented, their areas of application are analyzed, restrictions can be assessed and related entrepreneurial and social issues discussed.</p>					
Literature and teaching aids					
Extensive lecture notes and exercises (will be provided as PDF files)					
Aberle, G. (2009): Transportwirtschaft, 5th edition, Munich					
Ackermann, T. (2016): Handbuch Marketing im ÖPNV, DVV Media Group, Hamburg					
Conrady, R./ Fichert, F./ Sterzenbach, R. (2019): Luftverkehr. Ein betriebswirtschaftliches Lehr- und Handbuch, 6th edition, Munich.					
Stock, W./ Bernecker, T. (2014): Verkehrsökonomie: Eine empirisch orientierte Einführung in die Verkehrswissenschaften, 2nd edition, Wiesbaden					

Doganis, R.(2019): Flying Off Course: Airline economics and marketing, 5th edition, London, New York
Kummer, S. (2018): Einführung in die Verkehrswirtschaft, 3rd edition, Stuttgart
Pompl, W. (2006): Luftverkehr. Eine ökonomische und politische Einführung, 5th edition, Berlin
Reinhardt, W. (2012): Öffentlicher Personennahverkehr, Technik, - rechts- und betriebswirtschaftliche Grundlagen, Wiesbaden
Shaw, S. (2011): Airline Marketing and Management, 7th edition, Aldershot

MPM 10 Information Systems and Databases

No: MPM 10	Mandatory module: Information Systems and Databases	Language: German		Credit points: 6	
		Frequency: each spring term		Term: 2	
		Workload: 180 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 124 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Information Systems and Databases		Dipl.-Ing. (FH) Apel M.Sc.Eng.		V+Ü	3+1
This module is used for the following degree programs: MPM and WMV					
Contents					
History and tasks of information systems, number systems, information representation, relational model, SQL					
Learning objectives and competencies to be imparted					
Students gain insight into the importance of computer science or information systems in general. They can assess the importance of information systems and understand them fundamentally. They are able to design a database and create it using SQL.					
Literature and teaching aids					
Levi, P./ Rembold, U. (2002): Einführung in die Informatik für Naturwissenschaftler und Ingenieure, 4th edition, Carl Hanser Verlag					
Precht, M./ Meier, N./ Tremel, D. (2004); Eine Einführung in Theorie und Praxis der modernen EDV, 7th edition, Addison-Wesley Publishers					
Elmasri, R. A./ Navathe, S. B. (2009): Grundlagen von Datenbanksystemen, 3rd edition, Pearson Studium					
Date, C. J. (2003): An introduction to database systems, Pearson					
Sieben, J. (2018): Oracle SQL Das umfassende Handbuch, 3rd edition, Rheinwerk Computing					

3. Term 3

MPM 11 Traffic Planning

No: MPM 11	Mandatory module: Traffic Planning	Language: German		Credit points: 6	
		Frequency: each fall term		Term: 3	
		Workload: 180 hrs.		Form of examination: KL60+PA	
	Prerequisites for participation:	Contact hours: 60 hrs.	Self-study hours: 120 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Traffic Planning		Prof. Dr.-Ing. Menzel		V+Ü	2+2
This module is used for the following degree programs: MPM and WMV					
Contents					
<p><u>Lecture Traffic Planning:</u> Principles and methodology of traffic planning, development and current status, planning process, steps of planning; division into traffic development planning and object planning, aspects of individual means of transport as well as group-specific aspects (e.g. accessibility) are explained theoretically and by means of practical examples</p> <p><u>Exercise Course Traffic Planning:</u> Within the semester, up to 4 traffic planning assignments and a one-day assignment with real-world and current relevance will be given, which can be completed individually or in small groups.</p>					
Learning objectives and competencies to be imparted					
<p>Upon successful participation, students possess methodological and conceptual competencies in all areas of traffic planning starting from the superordinate level of traffic development planning up to concrete traffic object planning. In the lecture and even more so in the exercise course, the taxonomy levels "analysis" and "synthesis" have to be achieved for the most part in order to pass with at least the grade "good" To achieve the grade 1.0 (very good), additional knowledge must be developed through independent study and in the exercise course. To pass with a "sufficient" 4.0, the "analysis" taxonomy level must be achieved in at least core aspects of traffic. Accordingly, the exam is divided into three equal parts: "collection questions", "comprehension questions" and "transfer questions". Correct answers to the "collection questions" and at least half of the "comprehension questions" correspond to reaching the taxonomy level "analysis" in core aspects. Reflection and criticism in the exercise course correspond to the taxonomy level "assessment" and can lead to an improvement of the grade in the exam (also to passing it).</p>					
Literature and teaching aids					
Literature and working materials as well as competent contact persons will be presented and named during the course.					

MPM 12 Traffic Ecology

No: MPM 12	Mandatory module: Traffic Ecology	Language: German		Credit points: 5	
		Frequency: each fall term		Term: 3	
		Workload: 150 hrs.		Form of examination: KL60+EA / KL60+HA	
	Prerequisites for participation:	Contact hours: 60 hrs.	Self-study hours: 90 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Traffic Ecology		Hon. Prof. Strube		V+Ü	2+2
This module is used for the following degree programs: MPM and WMV					
Contents					
<ol style="list-style-type: none"> 1. Introduction 2. Mobility versus environment 3. Traffic noise 4. Pollutants 5. Alternative fuels and drives 6. Environmental accounting 7. Energy consumption 8. Land use 9. External costs 10. Transport sustainability 					
Learning objectives and competencies to be imparted					
<p>The aim is to provide students with knowledge in the field of traffic ecology and to introduce them step by step to the necessary basics and terminology. Students will gain a holistic understanding of the interactions between the environment and traffic.</p> <p>After participation, students will have developed a sound understanding of the concepts of traffic ecology. They will have methodological and conceptual competencies regarding the cross-relationships between traffic and the environment, will be able to prepare emission balances, and will be able to apply sustainability methods in theory and practice.</p>					
Literature and teaching aids					
Literature and working materials as well as competent contact persons will be presented and named during the course.					

MPM 13 Business Management and Ethics

No: MPM 13	Mandatory module: Business Management and Ethics	Language: German		Credit points: 6	
		Frequency: each fall term		Term: 3	
		Workload: 180 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 60 hrs.	Self-study hours: 120 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Business Management and Ethics		Prof. Dr. Ernst		V+Ü	3+1
This module is used for the following degree programs: MPM					
Contents					
<ul style="list-style-type: none"> - Target formation - Environmental and business analysis - Strategy development and implementation - Basics of personnel management - Leadership models, principles and techniques - Tasks and process of personnel management - CSR and business ethics 					
Learning objectives and competencies to be imparted					
<p>Students know and apply selected methods of environmental and business analysis. Based on the results of these analyses, they develop strategies for specific company situations that are used to generate value creation potential and competitive advantages.</p> <p>Students will be familiar with the major issues related to managing employees. Students practice dealing with human resource management problems and tasks as human resource managers or employees. They know the importance of business ethics and evaluate the connection between business ethics and business success.</p>					
Literature and teaching aids					
<p>Macharzina, K./Wolf, J. (2017): Business Management: Das internationale Managementwissen, Konzepte - Methoden - Praxis, 10th edition, Springer Gabler, Wiesbaden</p>					

MPM 14 Marketing in Public Transport

No: MPM 14	Mandatory module: Marketing in Public Transport	Language: German		Credit points: 6	
		Frequency: each fall term		Term: 3	
		Workload: 180 hrs.		Form of examination: KL60 / PA / MP	
	Prerequisites for participation:	Contact hours: 60 hrs.	Self-study hours: 120 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Marketing Management		Prof. Dr. Ernst		V+Ü	3+1
This module is used for the following degree programs: MPM					
Contents					
<ul style="list-style-type: none"> - Marketing strategies - Management concepts of marketing (key-account management, CRM, brand management) - Services marketing - Basics of price, communication and sales management - Communication and brand strategies of transport companies, tariffs and prices in passenger transport - Marketing controlling 					
Learning objectives and competencies to be imparted					
Students analyze, develop, and control marketing strategies. They know different marketing instruments and apply them in the service sector, especially in public transport. In doing so, they manage the special features of bus, rail and air transport (pricing, tariffing, revenue allocation, revenue/yield management, etc.).					
Literature and teaching aids					
Ackermann, T. (2016): Handbuch Marketing im ÖPNV, DVV Media Group, Hamburg					
Kotler, P./ Keller, K.L./ Bliemel, F (2017): Marketing-Management, Munich					
Meffert, H. / Bruhn, M. (2018): Dienstleistungsmarketing, Münster					
Meffert, H. (Eds.) (2000): Verkehrsdienstleistungsmarketing: Marktorientierte Unternehmensführung bei der Deutschen Bahn AG, Frankfurt a.M.					

MPM 15 Business English

No: MPM 15	Mandatory module: Business English	Language: English		Credit points: 3	
		Frequency: each fall term		Term: 3	
		Workload: 90 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 30 hrs.	Self-study hours: 60 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Business English		Dr. Caplan		V	2
This module is used for the following degree programs: MPM, SRM, TM, SPM, MM					
Contents					
<ul style="list-style-type: none"> - Advanced grammar and communication basics - English vocabulary of economics and business administration - Strategic thinking - Motivation and personnel in the company - Personality traits - Team spirit and organization - Stakeholder theory - Corporate Social Responsibility (CSR) 					
Learning objectives and competencies to be imparted					
Students will build a basic vocabulary of business English and gain insight into the "mind of the manager" and the relationship to the customer and to co-workers through a variety of assignments and discussions. Students will be able to understand personality development and innovation in business. This seminar deals with the role of ideals in business and the work of a manager and gives insight into the philosophical background of the term "CSR". Furthermore, the term "customer" will be deepened and discussed.					
Literature and teaching aids					
Caplan, Th. (2015): The Distinction of Human Being, Vernon Press, Delaware.					
Duckworth, M./ Turner, R. (2012): Business Result, Upper-Intermediate, Oxford					
Dubicka, I./ O'keeffe, M. (2016): Market Leader, Advanced, 3rd ed., Pearson, London.					
Trappe, T./Tullis, G. (2016): Intelligent Business, Advanced, 5th ed., Pearson, London.					
Rosenberg, M. (2020): Business Partner, C1 Coursebook, 1st ed., Pearson, London.					

MPM 16 Human Resources, Diversity

No: MPM 16	Mandatory module: Human Resources, Diversity	Language: German		Credit points: 3	
		Frequency: each spring term		Term: 3	
		Workload: 90 hrs.		Form of examination: KL60 / PA / RE	
	Prerequisites for participation:	Contact hours: 30 hrs.	Self-study hours: 60 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Human Resources, Diversity		Prof. Dr. Trost		V+Ü	1+1
This module is used for the following degree programs: MPM					
Contents					
<ul style="list-style-type: none"> - Strategic personnel management (leadership needs, typology of leadership styles, leadership behavior, traditional leadership models, modern management approaches, leadership, diversity management) - Motivational aspects of personnel management - Operational HR: Recruitment, selection, development, incentive systems, personnel organization, organization of personnel work - Legal framework and co-determination - Basic knowledge in current fields of human resources management (compliance, shortage of skilled workers, subcontractor liability, volunteer management, etc.) 					
Learning objectives and competencies to be imparted					
<p>Students have a sound overview of essential aspects of personnel management and personnel leadership. They are able to explain the importance of systematic personnel planning, characterize its sub-aspects and establish the reference to holistic corporate management. They understand the advantages of diversity in an organization and can name and exemplify the strategy and measures of diversity management. They know basic concepts, instruments and methods for successful recruitment, selection, development and personnel management. Through active participation, the presentation and discussion of self-developed solution approaches, their argumentation and presentation skills as well as the critical reflection of their own and others' approaches are improved. Students are able to comprehensively and systematically grasp problems in the field of HR, select suitable concepts for solving problems and apply them appropriately.</p>					
Literature and teaching aids					
<p>Berthel, J./ Becker, F. G. (2017): Personal-Management. Grundzüge für Konzeptionen betrieblicher Personalarbeit. 11th edition, Schäffer Poeschel, Stuttgart.</p> <p>Brox, H./ Rütters, B./ Henssler, M. (2016): Arbeitsrecht. 19. edition, Kohlhammer, Stuttgart.</p> <p>Franken, S. (2014): Personal Diversity Management, Springer, Wiesbaden</p> <p>Festing, M. et al. (2011): Internationales Personalmanagement. 3rd edition, Gabler, Wiesbaden</p> <p>Holtbrügge, D. (2015): Personalmanagement. 6th edition, Springer Gabler, Berlin/Heidelberg.</p> <p>Oechsler, W. (2000): Personal und Arbeit, 7th edition, Munich</p> <p>Olfert, Klaus (2015): Personalwirtschaft, 16th edition, Ludwigshafen</p> <p>Stock-Homburg, R./ Groß, M. (Hrsg.) (2019): Personalmanagement – Theorien – Konzepte – Instrumente, 4th edition, Springer Gabler, Wiesbaden</p>					

Trost, A. (2012): Employer Branding. Arbeitgeber positionieren und präsentieren. Luchterhand, 2nd edition, Munich.

MPM 8 Academic and Social Skills

No: MPM 8	Mandatory module: Academic and Social Skills	Language: German		Credit points: 3 (5)	
		Frequency: each fall term		Term: 3	
		Workload: 90 hrs.		Form of examination: PR+HA	
	Prerequisites for participation:	Contact hours: 45 hrs.	Self-study hours: 45 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Communicating, Presenting, Facilitating Meetings		Dipl.-Ök. Anja Borchers		S	3
This module is used for the following degree programs: MPM					
Contents					
<p><u>Presenting:</u></p> <ul style="list-style-type: none"> - Definition of the term "presentation" - Clarification of the presentation objective - Analysis as well as consideration of the target group - Selection and structuring of content - Principles as well as possibilities of visualizations - Selection and use of different media - Dealing with difficult situations (stage fright, questions, objections, breakdowns) - Presentation organization - Presentation followed by discussion/reflection <p><u>Communicating and Facilitating Meetings:</u></p> <ul style="list-style-type: none"> - Definition, goals, tasks and areas of application of facilitation - The role of the facilitator / dual role of executive/facilitator - Procedure/phases of facilitating a meeting - Dealing with difficult types of participants - Detailed description of the instruments or the tools of facilitating - Planning the facilitation of a meeting - Communication theory and models and their application - Conversation techniques (I-messages, listening, questions), body language, feedback techniques, basic rules of constructive communication 					
Learning objectives and competencies to be imparted					
Students acquire important academic and social skills for later professional and management tasks.					
<p><u>Presenting:</u></p> <p>With the help of the acquired basic knowledge on the topic of "presentating" as well as due to the various practical exercises within the course, the students are able to prepare and give an effective presentation.</p> <p><u>Communicating and Facilitating Meetings:</u></p> <p>Furthermore, the students master the facilitation methodology with its goals and possible applications. Students are also familiar with the role of the facilitator and his or her responsibilities. They can lead conversations and ensure balanced participation of all participants. They will get to know and use different facilitation methods. In addition, students will be able to plan and present facilitation procedures for a variety of settings. Furthermore, they have strategies on how facilitators can deal with difficult participants. A great deal of</p>					

emphasis is placed on students implementing the tools/methods of facilitating in practical exercises. Exercises in plenary and in small groups alternate. Active participation of students is required in the seminar. Communication is the foundation of any relationship. Not communicating is not possible. It is not only a matter of formulating messages clearly and concisely, but also of interpreting the messages of others correctly. In the area of "Communication", students learn the most important aspects of communication and conversation management and practice these by means of exercises and role plays.

Literature and teaching aids

Presenting:

Lecture notes

Hartmann, M./ Funk, R./ Nietmann, H. (2018): Präsentieren: Präsentationen: zielgerichtet, adressatenorientiert, nachhaltig, 10th revised edition, Weinheim, Basel: Beltz Verlag

Holzheu, H. (2010): Natürliche Rhetorik ohne Lampenfieber, München: Goldmann Verlag (TB)

Schilling, G. (2012): Angewandte Rhetorik und Präsentationstechnik: Der Praxisleitfaden für Vortrag und Präsentation, revised edition, Berlin: Gert Schilling Verlag

Schulz von Thun, F. (2016): Miteinander Reden 1 - Störungen und Klärungen, 53th edition (original edition), Reinbek bei Hamburg: Rowohlt Taschenbuch Verlag

Schulz von Thun, F./ Ruppel, J./ Stratmann, R. (2017): Miteinander Reden: Kommunikationspsychologie für Führungskräfte, 17th edition (original edition), Reinbek bei Hamburg: Rowohlt Taschenbuch Verlag

Seifert, J. W. (2015): Visualisieren - Präsentieren – Moderieren, 35th edition, Offenbach: Gabal Verlag

Communicating and Facilitating Meetings:

Lecture notes

Funcke, A., Havenith, E. (2017): Moderationstools, 5th edition, Bonn: managerSeminare Verlags GmbH

Graeßner, G. (2013): Moderation- das Lehrbuch: Gruppensteuerung und Prozessbegleitung, 2nd edition, Augsburg: ZIEL Verlag

Groß, S. (2018): Moderationskompetenzen: Kommunikationsprozesse in Gruppen zielführend begleiten, Wiesbaden: Springer Gabler

Hartmann, M. u.a. (2012): Zielgerichtet moderieren, 6th edition, Weinheim, Basel: Beltz Verlag

Sperling, J. B./Stapelfeldt, U., Wasseveld-Reinhold, J. (2011): Moderation, Freiburg: Haufe Lexware Verlag

4. Term 4

MPM 17 Investment and Financing

No: MPM 17	Mandatory module: Investment and Financing	Language: German		Credit points: 6	
		Frequency: each spring term		Term: 4	
		Workload: 180 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 124 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Investment		TBD		V+Ü	1+1
Financing				V+Ü	1+1
This module is used for the following degree programs: LOM, LOP, MPM, WMV					
Contents					
<ul style="list-style-type: none"> - Introduction - Rating and Basel I, II and III - Overview of the business models of banks and task of the ECB with monetary international scenarios - Basics of financial mathematics, types of financing, finance plan, financing rules, cash flow, leverage effects - Investment calculation methods, leasing, ABS structures, optimal useful life and replacement time, overview of derivatives 					
Learning objectives and competencies to be imparted					
<p>Students will know how companies finance their investments after taking this module. They can take into account key economic goals, such as profitability. Alternative financing, such as leasing, can be examined from a profitability perspective and analyzed internationally. Students will be able to identify financial instruments and interrelationships and explain them using practical examples. In addition, students are able to decide when investments are worthwhile. They will be able to demonstrate and assess the impact of investments on companies. All major corporate taxes are known.</p>					
Literature and teaching aids					
Lecture notes					
Wöhe, G. (2016): Allgemeine BWL, 26th edition, Vahlen, Munich.					
Perridon, L.; Steiner, M.; Rathgeber, A. (2017): Finanzwirtschaft der Unternehmung, 17th edition, Vahlen, Munich.					
Kruschwitz, L.; Husmann, S. (2012): Finanzierung und Investition, 7th edition, Oldenbourg, Munich Vienna.					
Olfert, K. (2017): Kompakt-Training Finanzierung, 9th edition, Kiehl-Verlag, Herne.					
Olfert, K. (2015): Kompakt-Training Investition, 7th edition, Kiehl-Verlag, Herne.					
Röhrich, M. (2007): Grundlagen der Investitionsrechnung, Oldenbourg, Munich Vienna.					

MPM 18 Passenger Transport Systems and Law

No: MPM 18	Mandatory module: Passenger Transport Systems and Law	Language: German		Credit points: 9	
		Frequency: each spring term		Term: 4	
	Prerequisites for participation:	Workload: 270 hrs.		Form of examination: KL60+PA	
Contact hours: 84 hrs.		Self-study hours: 186 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Passenger Transport Systems Bus and Rail		Prof. Dr.-Ing. Menzel		V+Ü	2+2
Special Legal Bases for Bus and Rail Transport				V	2
This module is used for the following degree programs: MPM					
Contents					
<p><u>Passenger Transport Systems Bus and Rail:</u> Basics, definitions of terms, development, causes and characteristics of mobility, user requirements for passenger transport systems, means of passenger transport and areas of application (especially bus and rail), offers and products in passenger transport, forms of operation in bus and rail transport, influence of infrastructure on transport systems. In addition to the lecture, practical exercises and a one-day assignment will be given, the successful completion of which can be counted towards the exam grade.</p> <p><u>Special Legal Bases for Bus and Rail Transport:</u> Special legal bases of public transport (AEG, EBO, PbefG, BOStrab, BOKraft, passenger rights): Legal norms in the EU-wide context (regulations and directives for public transport) and their impact on public transport companies (European) competition, public procurement and state aid law in relation to the transport sector and transport companies and their effects on public transport companies</p>					
Learning objectives and competencies to be imparted					
<p><u>Passenger Transport Systems Bus and Rail:</u> Upon successful completion, students will possess methodological and conceptual competencies in all areas of passenger transportation systems with respect to both the individual system perimeters and their application areas. In the lecture and even more so in the exercise course, the taxonomy levels "analysis" and "synthesis" have to be achieved for the most part in order to pass with at least the grade "good" To pass with a "sufficient" 4.0, the "analysis" taxonomy level must be achieved in at least core aspects of transport systems. To achieve the grade 1.0 (very good), additional knowledge must be developed through independent study and in the exercise course. Accordingly, the exam is divided into three equal parts: "collection questions", "comprehension questions" and "transfer questions". Correct answers to the "collection questions" and at least half of the "comprehension questions" correspond to reaching the taxonomy level "analysis" in core aspects. Reflection and criticism in the exercise course correspond to the taxonomy level "assessment" and can lead to an improvement of the grade in the exam (also to passing it).</p> <p><u>Special Legal Bases for Bus and Rail Transport:</u> Upon completion of the module, students will be familiar with the specific legal principles of public transport required for the establishment and operation of public transport, especially buses and trains. In addition to the legal implications, students also recognize the impact of the regulations on the business side of transportation (market access, bidding opportunities, etc.).</p>					

Students master essential legal principles for transport companies (e.g. rail transport companies). Predominantly in a European context, the following regulatory areas are analyzed in terms of their impact on public transport: Students are familiar with public procurement and state aid law as an important field of entrepreneurial activities ("winning tenders") and can assess their impact on entrepreneurial activities.

Literature and teaching aidsPassenger Transport Systems Bus and Rail:

Literature and working materials as well as competent contact persons will be presented and named during the course.

Special Legal Bases for Bus and Rail Transport:

Legal texts and legal bases from national legislation, latest version in each case

Various EU directives and regulations on transport, latest version in each case

Literature and working materials will be presented during the course.

MPM 19 Freight Transport Systems

No: MPM 19	Mandatory module: Freight Transport Systems	Language: German		Credit points: 3	
		Frequency: each spring term		Term: 4	
		Workload: 90 hrs.		Form of examination: KL60 / RE	
	Prerequisites for participation:	Contact hours: 28 hrs.	Self-study hours: 62 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Freight Transport Systems		Prof. Dr. Trost		V+Ü	1+1
This module is used for the following degree programs: MPM					
Contents					
<p>Transport policy framework conditions; design/structure of transport chains; logistics and freight transport, logistics services; competitive situation, market situation, supply strategies in road freight, rail freight, inland waterway transport, coastal/sea shipping and air freight transport, significance, fields of application and strategies in CT; interfaces and logistical interconnection points; city logistics, interconnectedness of passenger and freight transport in the planning field of urban and rural areas, green logistics, innovations in freight transport.</p>					
Learning objectives and competencies to be imparted					
<p>After completing the module, students will be familiar with the strategic starting conditions, the fields of application as well as the offers and products of the individual modes of freight transport against the background of the transport policy framework and the competitive situation. Students gain insight across all modes of transportation and learn about the various possible modes of handling freight. This is complemented by a transport chain-related representation along the supply chain. The production linkage between passenger and freight transportation is evident to students in many places, such as infrastructure sharing, vehicles/equipment, and infrastructure. The taxonomy levels "Analysis" and "Synthesis" are thus largely achievable; the critical consideration and reflection in the case of the deployment profiles and competitive relationships as well as the environmental impact correspond to the taxonomy level "assessment".</p>					
Literature and teaching aids					
<p>Extensive lecture notes (will be provided as PDF files)</p> <p>Arnold, D./ Isermann, H. / Kuhn, A. et al. (Eds.; 2008): Handbuch Logistik, 3rd edition, Berlin, Heidelberg</p> <p>Bretzke, W.R. (2015): Logistische Netzwerke, 3rd edition, Berlin et al.</p> <p>Eisenkopf, A./ Knorr, A. (2008): Neue Entwicklungen in der Eisenbahnpolitik, Berlin</p> <p>Deckert, C. (2015): CSR und Logistik: Spannungsfelder Green Logistics und City-Logistik, Berlin, Heidelberg</p> <p>Gronalt, M. et al. (2011): Handbuch intermodaler Verkehr: kombinierter Verkehr: Schiene - Straße - Binnenwasserstraße, 2nd edition, Aachen</p> <p>Klaus, P./ Krieger, W./ Krupp, M. (Eds.; 2012): Gabler Lexikon Logistik - Management logistischer Netzwerke und Flüsse, 5th edition, Wiesbaden</p> <p>Krampe, H./ Lucke, H.-J. (2012), Schenk, M.: Grundlagen der Logistik – Einführung in die Theorie und Praxis logistischer Systeme, 4th edition, Munich</p>					

Kummer, S./ Schramm, H.-J./ Sudy, I. (2010): Internationales Transport- und Logistikmanagement, 2nd edition, Stuttgart

Stölzle, W./ Fagagnini, H. P. (Eds.; 2010): Güterverkehr kompakt, München

Trost, D. G. (1999): Vernetzung im Güterverkehr, Giessener Studien zur Transportwirtschaft und Kommunikation, Vol. 16, Hamburg

MPM 20 Air Transport Systems and Law

No: MPM 20	Mandatory module: Air Transport Systems and Law	Language: German		Credit points: 6	
		Frequency: each spring term		Term: 4	
		Workload: 180 hrs.		Form of examination: KL60	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 124 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Passenger Transport System Air Transport		Prof. Dr. Cerbe		V	2
Special Legal Bases of Air Transport				V	2
This module is used for the following degree programs: MPM					
Contents					
<u>Passenger Transport System Air Transport:</u>					
<ul style="list-style-type: none"> - Basics and definitions of terms - Air transport organizations - Political and legal foundations - Air transport and environmental protection - Security - Air transport demand - Production factors - Airports - Market structure 					
<u>Special Legal Bases of Air Transport:</u>					
<ul style="list-style-type: none"> - Fundamentals of aviation law - Public aviation law - Multilateral regulations - Bilateral air services agreements - European aviation law - National aviation law - Private aviation law - International liability law - European private aviation law - National private aviation law 					
Learning objectives and competencies to be imparted					
<u>Passenger Transport System Air Transport:</u>					
Students have knowledge about technical terms, causes and parameters of "mobility" as well as the specifics of the different transport purposes and groups of people in air transport. Knowledge of these specific conditions forms the basis for the customer-oriented design of air transport systems and the derivation of promising products and efficient forms of operation.					
Against the background of the general conditions of transport policy and the competitive situation, the students are familiar with the strategic starting conditions, the fields of application as well as the offers and products of air transport. Students thus have a broad overview of all relevant participants in public air transportation.					

Special Legal Bases of Air Transport:

Upon completion of this module, students will be familiar with the specific legal principles of air transportation required for the establishment and operation of air transportation services. In addition to the legal implications, students also recognize the spillover effects of the regulations on the business side of transportation (market access, bidding opportunities, etc.). Furthermore, the students consider the legal framework not only from the point of view of the transport companies, but also from that of the users.

Students will subsequently master essential legal principles for airlines. Predominantly in a European context, the following regulatory areas are analyzed in terms of their impact on public air transport: Cartels and agreements, merger control, abuse control in case of market dominance.

Literature and teaching aids**Passenger Transport System Air Transport:**

Conrady, R./ Fichert, F./ Sterzenbach, R. (2019): „Luftverkehr – Betriebswirtschaftliches Lehr- und Handbuch“, 6th edition, De Gruyter Oldenbourg, Munich

Literature and working materials as well as competent contact persons will be presented and named during the course.

Special Legal Bases of Air Transport:

Giemulla, E. (2018): „Handbuch des Luftverkehrsrechts“, Carl Heymanns Verlag, Köln

Literature and working materials as well as competent contact persons will be presented and named during the course.

MPM 21 Thesis

No: MPM 21	Mandatory module: Thesis	Language: German		Credit points: 5	
		Frequency: each spring term		Term: 4	
		Workload: 150 hrs.		Form of examination: SA	
	Prerequisites for participation:	Contact hours: 0 hrs.	Self-study hours: 150 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Thesis		Supervising lecturer		B	
This module is used for the following degree programs: LOM, LOP, LIM, MPM und WMV					
Contents					
<p>The specific question/task.</p> <p>The thesis can be linked to the course of study in a number of ways. The experiences or areas of responsibility during a voluntary internship can be documented and analyzed. The thesis can also be based on the contents of a course or on the evaluation of specialist literature.</p>					
Learning objectives and competencies to be imparted					
<p>Students independently work on a problem/task from their field of study within a given period of time. The topic is determined by a supervisor/examiner in consultation with the student. The previously learned principles of scientific work are thus brought to a first practical application, which also serves as preparation for the writing of the bachelor's thesis.</p>					
Literature and teaching aids					
<p>Course "Academic Skills and Methods"</p> <p>Faculty guide to writing scholarly papers</p> <p>The literature and working materials which are needed for the thesis</p>					

5. Term 5

MPM 22 Infrastructure, Information Technology and Digitization

No: MPM 22	Mandatory module: Infrastructure, Information Technology and Digitization	Language: German		Credit points: 6	
		Frequency: each fall term		Term: 5	
		Workload: 180 hrs.		Form of examination: KL60 / KL45+PA	
	Prerequisites for participation:	Contact hours: 60 hrs.	Self-study hours: 120 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Planning of Infrastructure and Stationary Facilities		Prof. Dr.-Ing. Menzel		V	2
Information Technology and Digitization				V	2
This module is used for the following degree programs: MPM					
Contents					
<p><u>Planning of Infrastructure and Stationary Facilities:</u> Differentiation of traffic facilities and their elements or equipment according to their function: Traffic infrastructure facilities, facilities for energy supply, operational control and handling, facilities for passenger interchange or system access and/or transition from and to other traffic systems, facilities for parking and maintenance of vehicles, depots for infrastructure maintenance; identification of infrastructure requirements, development of methods for design, planning and operation of traffic facilities; presentation of exemplary traffic facilities.</p> <p><u>Information Technology and Digitization:</u> Definitions and conception of traffic management, digitization and telematic technologies as the basis of traffic management, integrated, intermodal traffic management, traffic and travel information systems, special tasks of traffic management in public transport, effects of digitization in public transport.</p> <p>Tasks of traffic management in public transport; functionalities in traffic management:</p> <ul style="list-style-type: none"> - Control, monitoring, statistics and documentation of operations; - Coordination with the management of individual traffic; - Provision of data for passenger information, for timetabling and operational planning, and for staff deployment; - Vehicle dispatching and vehicle maintenance management; - Condition monitoring of traffic facilities and - Facilities as well as management of maintenance; - Incident management <p>Examples of facilities of the VM of different public transport systems and their operation, e.g.</p> <ul style="list-style-type: none"> - Cab radio centers; - Computer-aided operations control systems in scheduled public transport; - Network control center of DB-Netz for VM in SPfV 					
Learning objectives and competencies to be imparted					
<p><u>Planning of Infrastructure and Stationary Facilities:</u> Upon successful completion, students will have methodological and conceptual competencies in all areas of infrastructure planning and system dimensioning, as well as their areas of application. In the lecture part, the taxonomy levels "analysis" and "synthesis" have to be achieved for the most part in order to pass with at least the grade "good". To pass with a "sufficient" 4.0, the "analysis" taxonomy level must be achieved in at least core</p>					

aspects of traffic. Accordingly, the exam is divided into three equal parts: "collection questions", "comprehension questions" and "transfer questions". Correct answers to the "collection questions" and at least half of the "comprehension questions" correspond to reaching the taxonomy level "analysis" in core aspects. Content transfer with aspects of transport planning and passenger transport systems, the transport industry and other sub-areas of transport, logistics and mobility corresponds to taxonomy level "assessment" and can lead to a better grade in the written exam (including passing it).

Information Technology and Digitization:

Upon successful completion of the course, students will possess skills and knowledge in the planning design of all aspects of traffic management as well as the entire infrastructure, in each case related to road and rail.

Literature and teaching aids

Planning of Infrastructure and Stationary Facilities:

Literature and working materials as well as competent contact persons will be presented and named during the course.

Information Technology and Digitization:

Documents of traffic management actors and centers, e.g. VMZ Berlin, VMZ Lower Saxony

Grunow, V./ Hoyer, R./ Pitz, M.: REGIO-INFO – Autarkes, dynamisches Fahrgastinformations- und Sicherheitssystem für den ÖPNV an Haltestellen und Haltepunkten in der Region, in: Straßen- verkehrstechnik , no. 3, 2006, pp. 131-137

Publications by the Forschungsgesellschaft für Straßen- und Verkehrswesen, FGSV-Verlag Köln:

„Hinweise zur Strategieentwicklung im dynamischen Verkehrsmanagement“, 2003

„Verkehrsmanagement – Einsatzbereiche und Einsatzgrenzen“, 2002

„Vorbereitung und Umsetzung von Verkehrsmanagement“, 2005

Publications by the Bundesanstalt für Straßenwesen (bast), e.g.:

Dynamische Wegweiser mit integrierten Stauinformationen (dWiSta), edition 2004

BMBF mobility research reports, e.g. „Mobilität in Ballungsräumen“, „Verkehrsmanagement 2010“

Tagungsband „Mobilität und Verkehrsmanagement in einer vernetzten Welt“, Dresden 2003

Haag, M.: Wirkungen von Verkehrsmanagement, Kaiserslautern 1995

MPM 23 Service Design

No: MPM 23	Mandatory module: Service Design	Language: German		Credit points: 5	
		Frequency: each fall term		Term: 5	
		Workload: 150 hrs.		Form of examination: KL60 / PA / MP	
	Prerequisites for participation:	Contact hours: 60 hrs.	Self-study hours: 90 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Quality Management		Prof. Dr. Ernst		V+Ü	1+1
Market Research				V+Ü	1+1
This module is used for the following degree programs: MPM					
Contents					
<p><u>Quality Management:</u> Conceptual basics of service quality, peculiarities of quality management of services in public transport, models and methods of designing the quality of services, methods of quality measurement, possibilities of quality control. Development of a holistic quality strategy, sales and service management tools.</p> <p><u>Market Research:</u> Basics of marketing tools, qualitative research methods, surveys, observations, experiments, Basics: sample selection, measurement, scaling, quality criteria Data analysis: uni- and bivariate methods, multivariate methods, customer satisfaction analyses</p>					
Learning objectives and competencies to be imparted					
<p>Students analyze the importance of quality management for service companies. In doing so, they develop concrete ideas of special aspects in this area for passenger transport. Students will become aware of the challenges faced by the management of service companies in creating high-quality offers that satisfy the customer and will be able to manage them in a reflective manner. They assess the importance of quality for the company's success on the basis of customer impact (customer satisfaction), competitive impact (quality strategy) and company impact (TQM, certification). In this way, they develop strategies, measures and instruments to consolidate and increase (service) quality.</p> <p>Students expand on the basic and specialized knowledge acquired in the Marketing Management module. They conduct their own market research and can evaluate its success in a reflective manner.</p>					
Literature and teaching aids					
<p><u>Quality Management:</u> Bruhn, M. (2016): Qualitätsmanagement für Dienstleistungen. Grundlagen, Konzepte, Methoden. Berlin, 2016 Kamiske, G-F./ Brauer, J-P (2011).: Qualitätsmanagement von A-Z; Meffert, H./ Bruhn, N. (2018): Dienstleistungsmarketing. Grundlagen – Konzepte – Methoden, Wiesbaden Bruhn, M./ Homburg, C. (2017): Handbuch Kundenbindungsmanagement, Wiesbaden</p> <p><u>Market Research:</u> Backhaus, K., et.al. (2018): Multivariate Analysemethoden – Eine anwendungsorientierte Einführung,</p>					

Heidelberg.

Bley Müller J. (2015): Statistik für Wirtschaftswissenschaftler, München

Kuß, A. (2018): Marktforschung – Datenerhebung und Datenanalyse, Wiesbaden

Meffert, H./ Bruhn, M. (2018): Dienstleistungsmarketing: Grundlagen – Konzepte – Methoden, Wiesbaden

Schnell, R./ Hill, P.B./ Esser, E. (2018): Methoden der empirischen Sozialforschung, München

MPM 24 Traffic Management with Laboratory

No: MPM 24	Mandatory module: Traffic Management with Laboratory	Language: German		Credit points: 9	
		Frequency: each fall term		Term: 5	
		Workload: 270 hrs.		Form of examination: KL60+EA	
	Prerequisites for participation:	Contact hours: 90 hrs.	Self-study hours: 180 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Traffic Management with Laboratory		Prof. Dr. Santel		V+L	2+2
Operational Planning				V	2
This module is used for the following degree programs: MPM and WMV					
Contents					
<p><u>Traffic Management with Laboratory:</u> Definitions and conceptualization of traffic management including new developments in the field of intelligent traffic systems, telematics technologies as the basis of traffic management, integrated intermodal traffic management, traffic and travel information systems. Tasks of traffic management in public transport; functionalities in traffic management: Examples of traffic management facilities of various traffic systems and their operation. Project examples and, if possible, field trip to a traffic management center</p> <p><u>Operational Planning:</u></p> <ul style="list-style-type: none"> - Fundamentals and definitions of operational planning - Network planning - Capacity planning - Driving position planning - Staff scheduling - Dispositional measures in the operational processing - Emergency management 					
Learning objectives and competencies to be imparted					
<p><u>Traffic Management with Laboratory:</u> After successful participation in this module, students will be familiar with the history and causes of traffic management as well as with definitions of terms, goals of traffic management, instruments of traffic management, participants in traffic management, components of online traffic management, opportunities and limitations of traffic management, perspectives of traffic management. Through the accompanying lab, students are familiar with individual traffic management applications/tools. The topics covered will vary. Upon completion of the module, students will be familiar with the essential problems, scope of action, methods, procedures and instruments in the field of traffic management in different traffic systems. They can select instruments, methods and measures for specific fields of application that are appropriate considering the technical, operational, economic, ecological, etc. aspects of the project.</p> <p><u>Operational Planning:</u> Upon successful completion of the course, students will have sound knowledge of planning public transport services. It is taught how the entire planning task can be broken down into different sub-problems and how these can be solved. This involves answering strategic, tactical and operational questions.</p>					

Literature and teaching aidsTraffic Management with Laboratory:

Extensive lecture notes (will be provided as PDF files)

Schnabel W. / Lohse, D. (2011): Grundlagen der Straßenverkehrstechnik und der Straßenverkehrsplanung, vol. 1: Straßenverkehrstechnik; 3rd edition; Beuth Verlag, Berlin/Kirschbaum Verlag, Bonn

Forschungsgesellschaft für Straßen und Verkehrswesen (FGSV) (2015): Handbuch für die Bemessung von Straßenverkehrsanlagen (HBS); FGSV-Verlag, Köln

Forschungsgesellschaft für Straßen und Verkehrswesen (FGSV) (2005): Hinweise zum Fundamentaldiagramm; FGSV-Verlag, Köln

Documents from traffic management actors (traffic service providers) and centers, e.g. VMZ Berlin, VMZ Lower Saxony/Region Hannover, Betriebszentrale DB, etc.

Publications and Conferences "Intelligent Transport Systems - ITS"

Operational Planning:

Schnieder, L. (2018): „Betriebsplanung im öffentlichen Personennahverkehr“, VDI-Buch, Springer-Vieweg, Berlin

Janicki, J. (2016): „Systemwissen Eisenbahn“, DB-Fachbuch, BFV Bahn Fachverlag, Berlin

Jänsch, E. (Eds.; 2016): „Handbuch - Das System Bahn“, Eurailpress, Hamburg

MPM 25 Specialization Module I

No: MPM 25	Mandatory module: Specialization Module I	Language: German		Credit points: 8	
		Frequency: each fall term		Term: 5	
		Workload: 240 hrs.		Form of examination: see catalog SPM	
	Prerequisites for participation:	Contact hours: 90 hrs.	Self-study hours: 150 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Specialization Module I		See catalog SPM		See catalog SPM	6
This module is used for the following degree programs: LOM, LOP, LIM, MPM, WMV					
Contents					
See catalog SPM					
Learning objectives and competencies to be imparted					
See catalog SPM					
Literature and teaching aids					
See catalog SPM					

MPM 26 Electives

No: MPM 26	Mandatory elective module: Electives	Language: German		Credit points: 2 (4)	
		Frequency: each fall term		Term: 5	
		Workload: 60 hrs.		Form of examination: see catalog WPF	
	Prerequisites for participation:	Contact hours: 30 hrs.	Self-study hours: 30 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Elective I		See catalog WPF		See catalog WPF	2
This module is used for the following degree programs: cross-curricular					
Contents					
See catalog WPF					
Learning objectives and competencies to be imparted					
See catalog WPF					
Literature and teaching aids					
See catalog WPF					

6. Term 6

MPM 27 Strategy and Business Models

No: MPM 27	Mandatory module: Strategy and Business Models	Language: German		Credit points: 6	
		Frequency: each spring term		Term: 6	
		Workload: 180 hrs.		Form of examination: KL60 / PA / MP	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 124 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Strategic Management and Business Models in Public Transport		Prof. Dr. Ernst		V+Ü	3+1
This module is used for the following degree programs: MPM					
<p>Contents</p> <p>Instruments and methods of strategic management, leadership and management, planning and control systems, marketing and customer-oriented aspects of strategic management, special features of the management of passenger transport companies (business models, business field development, basic strategies of global players in public transport, service design/bundling, communication and brand strategies of transport companies, basics of pricing (tariffs and prices in passenger transport), selected strategic decision-making situations</p>					
<p>Learning objectives and competencies to be imparted</p> <p>Students describe and evaluate the importance of strategic management for corporate success. They apply corporate policy and goal-setting processes as well as decision-making processes in public transport companies. In the strategic management process, they apply the correct strategy based on the situation after appropriate analyses and presentation variants. They assess and correctly evaluate the special conditions of service companies in passenger transport, in particular their socio-political and transport policy dimensions.</p>					
<p>Literature and teaching aids</p> <p>Aberle, G. (2009): Transportwirtschaft – einzel- und gesamtwirtschaftliche Grundlagen, Vahlen, München 2009</p> <p>Macharzina, K./ Wolf, J. (2017): Business Management: Das internationale Managementwissen, Konzepte - Methoden - Praxis, 10th edition, Springer Gabler, Wiesbaden</p> <p>Meffert, H. (Eds.) (2000): Verkehrsdienstleistungsmarketing, Wiesbaden 2000</p> <p>Welge, M.K./ Al-Laham, A./ Eulerich, C. (2017): Strategisches Management: Grundlagen - Prozess – Implementierung, Springer Gabler, Wiesbaden</p>					

MPM 28 Seminar Traffic Projects

No: MPM 28	Mandatory module: Seminar Traffic Projects	Language: German		Credit points: 6	
		Frequency: each spring term		Term: 6	
		Workload: 180 hrs.		Form of examination: PA / PR	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 124 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Seminar Traffic Projects		Prof. Dr. Santel		S	2
Project Management				V+Ü	1+1
This module is used for the following degree programs: MPM, WMV					
Contents					
<p><u>Seminar Traffic Projects:</u> Current topics in the field of traffic are prepared and supervised. Collaboration with industry partners is sought. Students work on individual projects within the respective topic. Finally, the results of the student teams will be presented and discussed.</p> <p><u>Project Management:</u></p> <ul style="list-style-type: none"> - Definition, types and characteristics of projects - Standards and norms in project management - Importance, general conditions and current challenges - Procedure models at a glance - Project management phases (initialization, definition, planning, control and closure) - Project organization (roles and organizational forms) - Elements of project planning (structure, sequence, schedule, capacity and cost plan) - Monitoring of project progress and derivation of control measures - Continuous tasks (stakeholder management, risk management, project marketing, ...) - Methods and tools of classical project management - Introduction to agile project management - Leadership, communication and cooperation in the project team - Multi-project management (portfolio and program management) 					
Learning objectives and competencies to be imparted					
<p><u>Seminar Traffic Projects</u> The module provides students with practice-oriented methodological competencies to work on concrete projects. The various roles within the project structure are learned, from project management to project control to project processing.</p> <p><u>Project Management:</u> Students recognize the increasing importance of project work in large parts of the economy, are able to determine the project worthiness of projects and define and independently plan projects according to classical procedures. They know the most important instruments for project planning and monitoring and can apply them using relevant software. If necessary, students will be able to derive appropriate control measures. They can also analyze and critique third-party project plans and progress. In addition, students are made aware of the importance of internal and external communication as well as leadership and cooperation within a team and can take targeted team-building measures.</p>					

Literature and teaching aidsSeminar Traffic Projects:

Literature and working materials as well as competent contact persons will be presented and named during the course.

Project Management:

Burghardt, M. (2018): Projektmanagement. Leitfaden für die Planung, Überwachung und Steuerung von Projekten, 10th edition, Publicis Publishing, Erlangen.

Drews, G. et al. (2016): Praxishandbuch Projektmanagement, 2nd edition, Haufe, Freiburg, München.

Jenny, B. (2017): Projektmanagement. Das Wissen für eine erfolgreiche Karriere, 6th edition, vdf-Verlag, Zurich

Kuster, J. et al. (2019): Handbuch Projektmanagement. agil – klassisch – hybrid, 4th edition, Springer, Berlin

Patzak, G. / Rattay, G. (2017): Projektmanagement. Projekte, Projektportfolios, Programme und projektorientierte Unternehmen, 7th edition, Linde Verlag, Vienna.

Schwarze, J. (2016): Projektmanagement mit Netzplantechnik, 11th edition, NWB-Verlag, Herne.

MPM 29 Mobility Analyses and Traffic Models in Public Transport

No: MPM 29	Mandatory module: Mobility Analyses and Traffic Models in Public Transport	Language: German		Credit points: 6	
		Frequency: each spring term		Term: 6	
		Workload: 180 hrs.		Form of examination: KL60+PA / KL60+EA	
	Prerequisites for participation:	Contact hours: 56 hrs.	Self-study hours: 124 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Methods of Traffic Survey and Mobility Analyses		Prof. Dr. sc. ETH Santel		V+Ü	1+1
Traffic Models				V+Ü	1+1
This module is used for the following degree programs: MPM, WMV					
Contents					
<u>Methods of Traffic Survey and Mobility Analyses:</u>					
<ul style="list-style-type: none"> - Mobility concept - Causes of mobility - Methods and measurement of mobility, including computerized traffic surveys - Mobility data analysis 					
<u>Traffic Models:</u>					
<ul style="list-style-type: none"> - Traffic models in traffic planning and traffic engineering - exemplary questions - Model typology: aggregated / disaggregated traffic models - multi-level traffic models: traffic generation, traffic distribution, traffic mode choice, traffic route choice 					
Learning objectives and competencies to be imparted					
<p>Upon successful completion of this module, students will be familiar with problems, scope for action, methods, procedures and instruments in the areas of mobility analyses, traffic surveys and traffic models. The methods presented and concrete case studies can be used to classify procedures and derive the appropriate areas of application for various elements or instruments. Students are able to independently prepare and conduct traffic surveys or supervise their implementation and evaluate the collected data and prepare it for traffic demand modeling.</p>					
Literature and teaching aids					
Extensive lecture notes (will be provided as PDF files)					
Nobis, C./ Kuhnimhof, T. (2018): Mobilität in Deutschland – MiD Ergebnisbericht.					
Studie von infas, DLR, IVT und infas 360 im Auftrag des Bundesministers für Verkehr und digitale Infrastruktur, Bonn, Berlin. www.mobilitaet-in-deutschland.de					
Friedrich, M. / Schiller, C. (2009): Modellierung von Verkehrsangebot und Verkehrsnachfrage, Kursunterlagen; Dresden					
Bossert, D. (2019): Programm Ver_Bau, Abschätzung des Verkehrsaufkommens durch Vorhaben der Bauleitplanung, Programm-Handbuch; Gustavsburg div. software manuals of PTV AG, Karlsruhe					

Schnabel W. / Lohse. D. (2011): Grundlagen der Straßenverkehrstechnik und der Straßenverkehrsplanung, vol. 1: Straßenverkehrstechnik; 3rd edition; Beuth Verlag, Berlin/Kirschbaum Verlag, Bonn

Forschungsgesellschaft für Straßen und Verkehrswesen (FGSV) (2012): Empfehlungen für Verkehrserhebungen (EVE); FGSV-Verlag, Köln

Forschungsgesellschaft für Straßen und Verkehrswesen (FGSV) (2005): Hinweise zum Fundamentaldiagramm; FGSV-Verlag, Köln

MPM 30 Specialization Module II

No: MPM 30	Mandatory module: Specialization Module II	Language: German		Credit points: 8	
		Frequency: each spring term		Term: 6	
		Workload: 240 hrs.		Form of examination: see catalog SPM	
	Prerequisites for participation:	Contact hours: 84 hrs.	Self-study hours: 156 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Specialization Module II		See catalog SPM		See catalog SPM	6
This module is used for the following degree programs: LOM, LOP, LIM, MPM, WMV					
Contents					
See catalog SPM					
Learning objectives and competencies to be imparted					
See catalog SPM					
Literature and teaching aids					
See catalog SPM					

MPM 26 Electives

No: MPM 26	Mandatory elective module: Electives	Language: German		Credit points: 2 (4)	
		Frequency: each spring term		Term: 6	
		Workload: 60 hrs.		Form of examination: see catalog WPF	
	Prerequisites for participation:	Contact hours: 28 hrs.	Self-study hours: 32 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Elective II		See catalog WPF		See catalog WPF	2
This module is used for the following degree programs: cross-curricular					
Contents					
See catalog WPF					
Learning objectives and competencies to be imparted					
See catalog WPF					
Literature and teaching aids					
See catalog WPF					

7. Term 7

MPM 31 Supervised Internship

No: MPM 31	Mandatory module: Supervised Internship	Language: German		Credit points: 15	
		Frequency: each fall term		Term: 7	
		Workload: 450 hrs.		Form of examination: -	
	Prerequisites for participation: see "Prüfungsordnung"	Contact hours: 0 hrs.	Self-study hours: 450 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (CP)
Supervised Internship		Supervising lecturer		B	15
This module is used for the following degree programs: LOM, LOP, MPM und WMV					
Contents					
<p>As a rule, the supervised internships are designed in such a way that the students work on a project at the hosting institution or receive a self-contained sub-project within this framework. In addition to a general orientation in the company / the hosting institution or the establishment of a working environment, the students spend the first weeks of their internship familiarizing themselves with their work. Normally, the actual topic for the Bachelor's thesis is derived from the problem/task posed by the hosting institution in consultation with the university supervisor.</p>					
Learning objectives and competencies to be imparted					
<p>During the internship, students learn to integrate themselves into the usual work processes in a company. In doing so, they apply the knowledge they have acquired in their previous studies in practice-oriented methods.</p>					
Literature and teaching aids					
None					

MPM 32 Bachelor's Thesis and Defense

No: MPM 32	Mandatory module: Bachelor's Thesis and Defense	Language: German		Credit points: 15	
		Frequency: each fall term		Term: 7	
		Workload: 450 hrs.		Form of examination: BA + KO	
	Prerequisites for participation:	Contact hours: 0 hrs.	Self-study hours: 450 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (CP)
Bachelor's Thesis		Supervising lecturer		B	12
Defense				B	3
This module is used for the following degree programs: LOM, LOP, LIM, MPM und WMV					
Contents					
<p>After the official issue of the topic by the examination board, the actual preparation of the Bachelor's thesis is a continuous process, which is usually started during the internship term (in the last third) and intensified after completion. The supervision of the internship term and the supervision of the bachelor's thesis are carried out by the same supervisor.</p> <p>In the defense, the student gives a summary of his or her bachelor's thesis. In a short presentation the student presents the results of the bachelor's thesis. The examiners ask questions about the content of the thesis.</p>					
Learning objectives and competencies to be imparted					
<p>With their Bachelor's thesis, students demonstrate that they are able to independently work on a problem/task from their field of study, which is formulated by a supervisor/first examiner after consultation with the student, using scientific methods and within a specified period of time. The exact procedure for this is regulated by the "Prüfungsordnung". By preparing a presentation for the defense, students show that they are able to summarize and abstract the content of their bachelor's thesis.</p>					
Literature and teaching aids					
The relevant literature and working materials.					

Specialization Modules Catalog (SPM)

SPM 1 Cooperation Management

No: SPM 1	Specialization Module: Cooperation Management	Language: German		Credit points: 8	
		Frequency: each spring term		Term: 6	
	Prerequisites for participation: General business knowledge, business administration and logistics knowledge. Knowledge of how to facilitate meetings is helpful.	Workload: 240 hrs.		Form of examination: PA+KO	
Contact hours: 84 hrs.		Self-study hours: 156 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Cooperation Management in the Field of Logistics		Prof. Dr. Ordemann		V	2
Cooperation Management Projects				P	4
This module is used for the following degree programs: LOM, LOP, LIM, WMV, MPM					
<p>Contents</p> <p><u>Cooperation Management in the Field of Logistics Service Providers:</u> For many medium-sized logistics service providers, collaborations are the key to success in maintaining or increasing their competitiveness.</p> <p><u>Methods of Managing Cooperations:</u> The supply side of the logistics market in Germany is characterized on the one hand by large logistics groups and on the other by more medium-sized industry and specialists. Innovations that originated from medium-sized logistics service providers, e.g. the development of parcel service and general cargo networks in Germany, show that these companies have held their own very well against the logistics groups. The key to success here is often cooperation, i.e. well-organized collaboration between these companies. The performance of such medium-sized companies is all the more remarkable because the same companies are competitors in some of the same and, as a rule, in other logistical service areas. Since cooperative ventures are based on contractual agreements that can be terminated at any time, these contexts make it clear that designing a cooperative venture is much more difficult than, for example, the prescribed cooperation between branches of a logistics group. The aim should always be to achieve a balance of interests that results in a higher cooperation benefit for each cooperating party in the medium term than its cooperation costs (monetary and non-monetary). Due to advancing globalization and the increasing complexity of logistical services, it is not particularly surprising that even logistics groups, especially at an international level, also (have to) provide part of their range of services on the basis of such cooperation.</p> <p>However, collaborations do not arise "just by the way", e.g. merely on the basis of a few meetings by managing directors of potential cooperators who would like to cooperate. Rather, knowledge and methods are required which make it possible to identify and remove potential barriers to the formation and development of cooperation. In the lecture part of this module, therefore, the typically required functions of a cooperation, such as the development, production, distribution, etc. are examined in more detail from a cooperation point of view. Apart from the alternative of organizing such functions in cooperative systems or by oneself, possible obstacles to cooperation as well as measures to overcome them are identified.</p> <p><u>Cooperation Management Projects:</u></p>					

In this part of the module, practice-oriented business management projects are carried out by the students under the direction and participation of the instructor.

Learning objectives and competencies to be imparted

After successful participation, students will be able to independently establish new collaborations, further develop existing collaborations or participate in them.

Literature and teaching aidsCollaboration Management in the Transport Industry:

Eckstein, W. E./ Szafera, S. (1998): Prozesse und Hemmnisse der Kooperation in der Transportwirtschaft, Bremen.

Deutscher Speditions- und Logistikverband DSLV (ed.), Speditionskooperationen in Deutschland, n.p., current edition.

Wiendahl, H.-P./ Dreher, C./ Engelbrecht, A. (eds.; 2005): Erfolgreich kooperieren, Springer Verlag, Heidelberg.

Zentes, J./ Swoboda, B./ Morschett, D. (2005): Kooperationen, Allianzen und Netzwerke, 2nd revised edition, Springer Verlag, Wiesbaden

Bretzke, W.-R./ Barkawi, K., Nachhaltige Logistik, Berlin, Heidelberg 2010

Lecture notes (will be provided as PDF file)

Cooperation Management Projects:

Lecture notes (will be provided as PDF file)

Documents by industry partners

SPM 2 Special Topics of the Transport Industry

No: SPM 2	Specialization Module: Special Topics of the Transport Industry	Language: German		Credit points: 8	
		Frequency: each fall term		Term: 5	
		Workload: 240 hrs.		Form of examination: KL90 / KL60+RE / RE	
	Prerequisites for participation:	Contact hours: 90 hrs.	Self-study hours: 150 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Transport, Infrastructure and Pricing Policy		Prof. Dr. Trost		V	3+1
Current Problems of Freight Transport				S	2
This module is used for the following degree programs: LOM, LOP, LIM, MPM und WMV					
Contents					
<p><u>Transport, Infrastructure and Pricing Policy:</u> Current status of national and international transport policy; deregulation of transport markets and deregulation experiences; pricing policy in the transport industry for different modes of transport; transport infrastructure calculations; economic transport infrastructure planning; (private and public) financing of transport infrastructure investments and transport modes; transport externalities and internalization.</p> <p><u>Current Problems of Freight Transport:</u> Independent work on current topics from selected areas of freight transport, preferably with reference to transport, infrastructure and pricing policy. Preparation of a short, written topic paper, presentation and discussion of the results in plenary sessions. Instructor-led guidance in the selection and in the various stages of elaboration is obligatory.</p>					
Learning objectives and competencies to be imparted					
<p>The module allows students to view the transportation sector from both a macroeconomic and business perspective. Following this module, students will be familiar with current developments in the national and international competitive framework. Deregulation experiences abroad can be critically examined and discussed by students. Students will be familiar with the problem areas of tolls/infrastructure charges, infrastructure accounting, economic transportation planning issues, and infrastructure and transportation financing issues after taking this module.</p> <p>Based on selected topics of freight transport, the students are be enabled to scientifically illuminate a given topic and to communicate the results of the analyses both in writing and in the context of a presentation. The current topics are critically discussed in plenary sessions, partial aspects are deepened, and the presented topics are evaluated. Overall, this succeeds in advancing to taxonomy level six, as this module does not only require knowledge and understanding, but also focuses on the use and application of what has been learned, as well as communication. Ultimately, even solutions can be developed.</p>					
Literature and teaching aids					
<p><u>Transport, Infrastructure and Pricing Policy:</u> Lecture notes (will be provided as PDF files) Aberle, G. (2009): Transportwirtschaft, 5th edition, Munich Bundesminister für Verkehr und digitale Infrastruktur (2016): Bundesverkehrswegeplan 2030, Berlin</p>					

Bundesminister für Verkehr und digitale Infrastruktur (2018): Berechnung der Wegekosten für das Bundesfernstraßennetz sowie der externen Kosten nach Maßgabe der Richtlinie 1999/62/EG für die Jahre 2018 bis 2022, Berlin

DB Netze (ed.) (2019): Das Trassenpreissystem 2020 der DB Netz AG, Frankfurt am Main

Eisenkopf, A. (2002): Effiziente Straßenbenutzungsabgaben, Theoretische Grundlagen und konzeptionelle Vorschläge für ein Infrastrukturabgabensystem, Giessener Studien zur Transportwirtschaft und Kommunikation, vol. 17, Hamburg

Grandjot, H.-H/ Bernecker, T. (2014): Verkehrspolitik – Grundlagen, Funktionen und Perspektiven für Wissenschaft und Praxis, Hamburg

Hennecke, R. (2003), Wegeausgabenorientierte Straßenbenutzungsgebühren – Wegerechnungen für das deutsche Straßennetz, Sensitivitätsanalyse und konzeptionelle Weiterentwicklungen, vol. 19, Giessener Studien zur Transportwirtschaft und Kommunikation, Hamburg

Link, H. / Dodgson, J. S. / Maibach, M. / Herry, M. (1999): The Costs of Road Infrastructure and Competition in Europe, Heidelberg – New York

Link, H./ Kalinowska, D./ Kunert, U./ Radke, S. (2009): Wegekosten und Wegekostendeckung des Straßen- und Schienenverkehrs in Deutschland im Jahre 2007, Berlin

Schade, J. (2005): Akzeptanz von Straßenbenutzungsgebühren: Entwicklung und Überprüfung eines Modells, Lengerich, Dresden

Stock, W./ Bernecker, T. (2014): Verkehrsökonomie, 2nd edition, Wiesbaden

Current Problems of Freight Transport:

Current specialist literature on the chosen topics.

SPM 3 Airline and Airport Management

No: SPM 3	Specialization Module: Airline and Airport Management	Language: German		Credit points: 8	
		Frequency: each fall term		Term: 5	
	Prerequisites for participation: Fundamentals of business administration	Workload: 240 hrs.		Form of examination: KL90	
Contact hours: 90 hrs.		Self-study hours: 150 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Airline Management with Seminar		Prof. Dr. Cerbe		V+S	2+2
Airport Management				V+Ü	1+1
This module is used for the following degree programs: LOM, LOP, LIM, MPM und WMV					
Contents					
<p><u>Airline Management with Seminar:</u> The lecture covers the following topics: Market structure, strategies and business models, corporate connections, network management, route and profit accounting, marketing management, information technologies. The seminar includes a business simulation (General Airline Management Simulation by Lufthansa Consulting): Three airlines are simulated over eight scheduling periods. Participants will gain insight into airline management, route planning, aircraft deployment, marketing, yield management, fleet planning, and crew and personnel planning.</p> <p><u>Airport Management:</u> Integration of airports into the air transport system, responsibilities and services of an airport, airport as a business enterprise, planning and financing of airports, growth management, airport cooperation, intermodal transport port management.</p>					
Learning objectives and competencies to be imparted					
<p>This module provides basic aviation knowledge. After completing the module, students have sound business knowledge using the example of airlines, airports and their interaction with other companies and organizations in the aviation industry. In a business simulation, students apply the knowledge imparted in the lectures to the task of leading an airline to entrepreneurial success and deepen their knowledge and skills. With the knowledge gained about the interdependencies and functionalities of air traffic, students will later be able to process and solve a wide variety of operational and strategic tasks in aviation companies.</p>					
Literature and teaching aids					
<p><u>Airline Management with Seminar:</u> Conrady, R.; Fichert, F.; Sterzenbach, R. (2019): „Luftverkehr: betriebswirtschaftliches Lehr- und Handbuch“, 6th edition, De Gruyter Oldenbourg, Munich Literature and working materials as well as competent contact persons will be presented and named during the course.</p> <p><u>Airport Management:</u> Schulz, A.; Baumann, S.; Wiedenmann S. (2010): „Flughafen Management“, Oldenbourg Verlag, München Mensen, H. (2013): Planung, Anlage und Betrieb von Flugplätzen, 2nd edition, Springer Gabler, Berlin/Heidelberg. Literature and working materials as well as competent contact persons will be presented and named during the course.</p>					

SPM 4 Human Resources

No: SPM	Specialization Module: Human Resources	Language: German		Credit points: 8	
		Frequency: each fall term		Term: 5	
		Workload: 240 hrs.		Form of examination: KL90 / RE	
	Prerequisites for participation: none	Contact hours: 90 hrs.	Self-study hours: 150 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Human Resources		Prof. Dr. Saleh		V+Ü	3+1
Labor Law				V+Ü	1+1
This module is used for the following degree programs: LOM, LOP, LIM, WMV, MPM					
Contents					
<u>Human Resources</u>					
<ul style="list-style-type: none"> - Foundations of human resource management - Organization of the personnel department - Personnel planning and recruitment - Personnel deployment and development - Personnel assessment and remuneration - Personnel management and release - Current developments in human resource management 					
<u>Labor Law</u>					
<ul style="list-style-type: none"> - Labor law in the legal system - Establishment and termination of employment relationships - Rights and focal points arising from the employment relationship - Legal protection in labor law - The main features of collective labor law - The recruitment process - The employment contract - Special forms of the employment contract - Termination of the employment relationship - Industrial action law; the labor court procedure 					
Learning objectives and competencies to be imparted					
<p>This module teaches students the creative, planning and controlling tasks of human resources management. They will learn to distinguish between the framework functions and the core functions of HR. Students are taught the many external as well as internal influences on human resources management as well as the resulting necessary operational measures.</p> <p>Students should be able to assess and apply human resources management tasks in the overall context of the company.</p>					
Literature and teaching aids					
<u>Human Resources</u>					
Hentze, J. (2005): Personalwirtschaftslehre, 7th edition, UTB, Stuttgart.					
Jung, H. (2017): Personalwirtschaft, 10th edition, De Gruyter Oldenbourg, Munich					
Olfert, K. (2015): Personalwirtschaft, 16th edition, Kiehl, Herne.					
Schmeisser, W./Clermont, A., Krimohove, D.(Hrsg.) (2015): Personalführung und Organisation, Vahlen Verlag,					

Munich.

Labor Law

Richardi, R. (2019): Arbeitsgesetze ArbG, 94th edition, Beck-Texte im dtv, Munich.

Junker, A. (2019): Grundkurs Arbeitsrecht, 18th edition, C.H. Beck, Munich.

Wörlen, R. (2011): Arbeitsrecht, 10th edition, Vahlen, Munich.

Mues, W.M., Eisenbeis, E., Laber, J. (2010): Handbuch zum Kündigungsrecht, Dr. Otto Schmidt Verlag, Cologne.

Greiner, S.; Preis, U.; Rolfs, C.; Stoffels, M.; Wagner, K.J. (2015): Der Arbeitsvertrag, Dr. Otto Schmidt Verlag, Köln.

Gaul, B. (2018): Aktuelles Arbeitsrecht, Dr. Otto Schmidt Verlag, Köln.

Neue Zeitschrift Arbeitsrecht (NZA), Beck, Munich, Frankfurt a. Main.

Sowie

Extensive lecture notes (will be provided as PDF files)

SPM 5 Business Application Systems

No: SPM 5	Specialization Module: Business Application Systems	Language: German		Credit points: 8	
		Frequency: each spring term		Term: 6	
		Workload: 240 hrs.		Form of examination: ED +PR / KL90	
	Prerequisites for participation: none	Contact hours: 84 hrs.	Self-study hours: 156 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Building Blocks of Business Application Systems in Logistics		Prof. Dr. Franke		V	2
Implementation of Logistics Application Systems				L	4
This module is used for the following degree programs: LOM, LOP, LIM, WMV, MPM					
Contents					
<u>Building Blocks of Business Application Systems in Logistics:</u>					
<ul style="list-style-type: none"> - Theory and implementation of different topics of logistic information and application systems - IT in logistics, processes in the area of transport and warehouse - Basics of special programming languages 					
<u>Implementation of Logistics Application Systems:</u>					
<ul style="list-style-type: none"> - Project planning of a logistic application example - Implementation of the example 					
Learning objectives and competencies to be imparted					
<u>Building Blocks of Business Application Systems in Logistics:</u>					
After participation, students will master basic, selected business tasks of logistical information and application systems and will be able to implement them prototypically.					
<u>Implementation of Logistics Application Systems:</u>					
Building blocks of logistical application systems are examined in more detail in order to implement them directly in software. As a result, a prototypically developed logistics application system from the areas of transportation and warehousing is created.					
Literature and teaching aids					
<u>Building Blocks of Business Application Systems in Logistics:</u>					
Lecture notes					
A. Stern (2016): Keine Angst vor Microsoft Access! Datenbanken verstehen, entwerfen und entwickeln - Für Access 2007 bis 2016, O'Reilly; edition: 5					
Held, B. (2016): VBA mit Access: Das umfassende Handbuch mit VBA-Lösungen für Access 2007 bis Access 2016. Inkl. Makro-Lösungen und Praxisbeispielen, Rheinwerk Computing; edition: 2					
Langer, W. (2016): Access 2016: Das umfassende Handbuch. Tabellen, Formulare, Berichte, Datenbankdesign, Abfragen, Import und Export, SQL, VBA, DAO u. v. m., Rheinwerk Computing; edition: 1					
<u>Implementation of Logistics Application Systems:</u>					
Lecture notes					

A. Stern (2016): Keine Angst vor Microsoft Access! Datenbanken verstehen, entwerfen und entwickeln - Für Access 2007 bis 2016, O'Reilly; edition: 5
Held, B. (2016): VBA mit Access: Das umfassende Handbuch mit VBA-Lösungen für Access 2007 bis Access 2016. Inkl. Makro-Lösungen und Praxisbeispielen, Rheinwerk Computing; edition 2
Langer, W.(2016): Access 2016: Das umfassende Handbuch. Tabellen, Formulare, Berichte, Datenbankdesign, Abfragen, Import und Export, SQL, VBA, DAO u. v. m. ,Rheinwerk Computing; edition: 1...

SPM 6 Process Management in Logistics and Supply Chain

No: SPM 6	Specialization Module: Process Management in Logistics and Supply Chain	Language: German		Credit points: 8	
		Frequency: each fall term		Term: 5	
	Prerequisites for participation: Fundamentals of business administration, bookkeeping and accounting, cost accounting and cost management, investment and financing	Workload: 240 hrs.		Form of examination: RE / PA / KL60	
Contact hours: 90 hrs.		Self-study hours: 150 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Process Management in Logistics and Supply Chain		Prof. Dr. Czenskowsky		V	2
Exercises / Projects				Ü / P	4
This module is used for the following degree programs: LOM, LOP, WMV, LIM, MPM					
Contents					
<ul style="list-style-type: none"> - Introduction - Processes and sub-processes - Process management - Instruments for process mapping or process recording and documentation - Instruments for time recording in processes - Instruments for overhead cost control as the basis of activity-based costing - Activity-based costing - Supply chain controlling and performance measurement - Organizational aspects in process management 					
Learning objectives and competencies to be imparted					
<p>After participating in this module, students will be familiar with the various internal and external processes in the supply chain and logistics. They can record and document these independently and systematically using appropriate instruments. Using controlling and cost accounting methods, students are also able to independently assess processes and sub-processes from a commercial perspective and plan and control them in terms of capacities, costs and times. The challenges that arise in the organizational anchoring of process management in companies and the requirements for the use of "process owners" can be assessed and overcome.</p>					
Literature and teaching aids					
<p>Lecture notes Czenskowsky, T.; Poussa, J.; Segelken, U. (2/2002): Prozessorientierte Kostenrechnung in der Logistik, in: Kostenrechnungspraxis krp 2/2002, pp. 75-86 Czenskowsky, T.; Piontek, J. (2012): Logistikcontrolling, 2nd edition, Deutscher Betriebswirte Verlag, Gernsbach Delfmann, W.; Reihlen, M. (Eds.; 2003): Controlling von Logistikprozessen, Schäffer Poeschel, Stuttgart Erlach, K. (2010): Wertstromdesign, 2nd edition, Springer, Heidelberg Gadatsch, A. (2012): Grundkurs Geschäftsprozess-Management, 7th edition, Gabler, Wiesbaden Klaus, P.; Staberhofer, F.; Rothböck, M. (Eds.; 2007): Steuerung von Supply Chains, Gabler, Wiesbaden</p>					

Remer, D. (2005): Einführen der Prozesskostenrechnung, 2nd edition, Schäffer-Poeschel, Stuttgart.
Richert, J. (2006): Performance Measurement in Supply Chains, Gabler, Wiesbaden
Schick, U.; Haupt, H.; Mallon, P. u. a. (2009): Spedition und Logistikdienstleistung Leistungsprozesse, 3rd edition, Winkler's Verlag, Brunswick, Germany
Weber, J.; Wallenburg, C. (2010): Logistik- und Supply Chain Controlling, 6th edition, Schäffer-Poeschel, Stuttgart.

SPM 7 Optimization of Transport and Traffic

No: SPM 7	Specialization Module: Optimization of Transport and Traffic	Language: German		Credit points: 8	
		Frequency: each fall term		Term: 6	
		Workload: 240 hrs.		Form of examination: KL60+ED	
	Prerequisites for participation: Basics in mathematics, computer science and operations research, knowledge of the programming language C	Contact hours: 90 hrs.	Self-study hours: 150 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Modeling and Quantitative Solutions		Prof. Dr. Hansmann		V	2
Computer-Aided Optimization				L	4
This module is used for the following degree programs: LIM (,LOM, LOP, MPM, WMV)					
Contents					
<u>Modeling and Quantitative Solutions:</u>					
<ul style="list-style-type: none"> - Graph theoretical concepts - Paths and flows in time-expanded networks - Mathematical Modeling, Mixed-Integer Models - Preprocessing techniques for model reduction - Generation of models (independently or via modeling languages) for optimization by commercial solvers - Decomposition approaches, rolling horizon methods, greedy heuristics 					
<u>Computer-Aided Optimization:</u>					
<p>In the laboratory, various optimization methods are developed and tested for specific practical problems. In the process, an almost complete project cycle is simulated: verbal problem description → model building → design of a solution procedure → implementation → program run → admissibility test of the particular solution → back transformation of the solution into user language</p>					
Learning objectives and competencies to be imparted					
<u>Modeling and Quantitative Solutions:</u>					
Students will be familiar with concepts for modeling and solving optimization problems for transportation and traffic. They are aware of advantages and disadvantages of different solutions such as heuristic or exact approaches.					
<u>Computer-Aided Optimization:</u>					
After successful participation, students are able to independently implement solutions for practical problems in logistics (in the programming language C). They are capable of using modeling environments and commercial solvers for optimization, and they have gained experience in the relationships between instance size, computation time, and solution quality. With the solutions generated by their own programs, students can contribute to decision support in logistics and transportation.					
Literature and teaching aids					
Lecture notes, results of projects and studies carried out by lecturer Krumke, S. O.; Noltemeier, H. (2009): Graphentheoretische Konzepte und Algorithmen, 2nd edition,					

Vieweg+Teubner, Wiesbaden

Cormen, Th. H. et al (2007): Algorithmen - Eine Einführung, 2nd edition, Oldenbourg Verlag, München

Grünert, T.; Irnich, St. (2005): Optimierung im Transport - Grundlagen (vol. I), Shaker Verlag, Aachen

Grünert, T.; Irnich, St. (2005): Optimierung im Transport - Wege und Touren (vol. II), Shaker Verlag, Aachen

Domschke, W. (2010): Logistik - Transport, 5th edition, Oldenbourg Verlag, München

Domschke, W. (2007): Logistik - Rundreisen und Touren, 5th edition, Oldenbourg Verlag, München

SPM 8 Applied Market Research

No: SPM 8	Specialization Module: Applied Market Research	Language: German		Credit points: 8
		Frequency: each fall term		Term: 5
	Prerequisites for participation: Knowledge from the field of passenger and/or freight transport or logistics	Workload: 240 hrs.		Form of examination: PA / RE / KL90
Contact hours: 90 hrs.		Self-study hours: 150 hrs.		
Courses:		Module commissioner:	Teaching and learning types:	Scope (SWS):
Introduction to Applied Market Research		Prof. Dr. Ernst	V	2
Project			P	4
This module is used for the following degree programs: LOM, LOP, WMV, LIM, MPM				
Contents				
<u>Introduction to Applied Market Research:</u>				
<ul style="list-style-type: none"> - Epistemological foundations, theory and empiricism - Structure and process of empirical research (concept specification, operationalization and measurement, research design and forms of investigation, sampling, data collection techniques, data preparation and analysis) 				
<u>Project:</u>				
<ul style="list-style-type: none"> - Conversion of an entrepreneurial decision problem into market research - Implementation of the market research - Derivation of recommendations for the solution of the entrepreneurial decision problem from the results of the market research 				
Learning objectives and competencies to be imparted				
<p>After participation, students will have mastered the basics of applied market research and will be able to independently design and manage market research projects and carry them out or outsource the implementation to a service provider.</p> <p>To this end, students first learn the basics of quantitative and qualitative empirical research, which they then apply in the context of a market research project.</p>				
Literature and teaching aids				
<p>Schnell, R., Hill, P.B., Esser, E. (2018): Methoden der empirischen Sozialforschung, München</p> <p>Meffert, H., Bruhn, M. (2018): Dienstleistungsmarketing: Grundlagen – Konzepte – Methoden, Wiesbaden</p> <p>Kuß, A. (2018): Marktforschung – Datenerhebung und Datenanalyse, Wiesbaden</p> <p>Bleymüller J. (2015): Statistik für Wirtschaftswissenschaftler, München</p> <p>Backhaus, K., et.al. (2018): Multivariate Analysemethoden – Eine anwendungsorientierte Einführung, Heidelberg</p>				

SPM 9 Electromobility

No: SPM 9	Specialization Module: Electromobility	Language: German		Credit points: 8
		Frequency: each spring term		Term: 6
	Prerequisites for participation: Basic knowledge in the field of transportation. Solidified basic knowledge of physics.	Workload: 240 hrs.		Form of examination: KL60+PA
Contact hours: 84 hrs.		Self-study hours: 156 hrs.		
Courses:		Module commissioner:	Teaching and learning types:	Scope (SWS):
Introduction to Electromobility		Hon. Prof. Strube	V	2
Electric Drives			V	2
Current Topics Electromobility			V+P	2
This module is used for the following degree programs: LOM, LOP, WMV, LIM, MPM				
Contents				
<ul style="list-style-type: none"> - Basics - Drivers/motivation - Electric vehicle structure - Drive components (motors, inverters, control) - Vehicle types - Power generation/distribution/storage - Secondary consumers - Charging infrastructure and grid integration - Environmental impact - Business models - Outlook/challenges 				
Learning objectives and competencies to be imparted				
<p>The aim is to provide students with knowledge in the field of electromobility and to introduce them step by step to the necessary basics and terminology. All major components of electrically powered vehicles, as well as the most common designs, are covered. Students gain a holistic understanding of electromobility. After participation, students will have developed a sound understanding of the concepts of electromobility. The modes of operation of the drive, storage, generation and distribution components with all essential boundary conditions are part of the acquired knowledge. They understand the connections between the power grid and the charging infrastructure and are familiar with possible business models and mobility concepts. Students are put in a position to decide on possible applications in companies and to help shape business models. They also know the essential components of electrically powered vehicles.</p>				
Literature and teaching aids				
<p>Lecture notes Öko-Institut, Optum, Ergebnisbroschüre: Umweltentlastungspotenziale von Elektrofahrzeugen -Integrierte Betrachtung von Fahrzeugnutzung und Energiewirtschaft, Berlin, 09/2011 UBA, Umweltverträglicher Verkehr 2050: Argumente für eine Mobilitätsstrategie für Deutschland, Berlin, 02/2014 BEE/InnoZ, Die neue Verkehrswelt - Mobilität im Zeichen des Überflusses: schlau organisiert, effizient, bequem und nachhaltig unterwegs, Berlin, 01/2015 Böhm, W.: Elektrische Antriebe, Würzburg, 2009</p>				

Schröder, D.: Elektrische Antriebe, Regelung von Antriebssystemen, Berlin, 2015
Fischer, R.: Elektrische Maschinen, München, 2017

SPM 10 Specialization in Overland Transport Technology

No: SPM 10	Specialization Module: Specialization in Overland Transport Technology	Language: German		Credit points: 8	
		Frequency: each spring term		Term: 6	
	Prerequisites for participation: Basic knowledge of transport systems	Workload: 240 hrs.		Form of examination: KL90 / KL60+PA	
Contact hours: 84 hrs.		Self-study hours: 156 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Specialization in Rail Transport		Prof. Dr. sc. ETH Santel		V+Ü	1+1
Specialization in Road Transport				V+Ü	3+1
This module is used for the following degree programs: LIM, LOM, LOP, MPM, WMV					
Contents					
<u>Specialization in Rail Transport:</u>					
<ul style="list-style-type: none"> - Essential elements of the railroad system including various track technologies, alignment parameters, etc. - The most important securing techniques - Function and variants of interlockings, level crossings, the dispatching and control technology for wheel/rail systems - Special track guided systems 					
<u>Specialization in Road Transport:</u>					
<ul style="list-style-type: none"> - Overview of structure, design and dimensioning of road traffic facilities - Relevant guidelines issued by the German Road and Transportation Research Association (FGSV) <p>Topics from the following list can be studied in greater depth:</p> <ul style="list-style-type: none"> - Structure of the system of interurban roads or structure and design of transport networks outside towns and within towns (cf. RIN) - Design of roads in site plan, elevation plan and cross section (cf. RASt, RAL and RAA) - Intersection shapes, basics of design methodology (cf. HBS 2015) - Dimensioning of junction-free sections, facilities for pedestrian traffic, bicycle traffic as well as stationary traffic. 					
Learning objectives and competencies to be imparted					
After successful participation, the students master contexts, procedures and methods that enable them to technically design or/and operate components or elements in the areas of road traffic engineering or rail traffic engineering.					
Literature and teaching aids					
<u>Specialization in Rail Transport:</u>					
Extensive lecture notes (will be provided as PDF files)					
Documents from rail transport companies, e.g. DB AG and supply industry e.g. Siemens, Vossloh					
EU documents, e.g. „Technische Spezifikationen für die Interoperabilität (TSI)“					
Maschek, U., „Sicherung des Schienenverkehrs“, Wiesbaden 2012					
Hausmann, A./ Enders, D.; Grundlagen des Bahnbetriebs, DB-Fachbuch 2007					
Janicki, J.; Systemwissen Eisenbahn, DB-Fachbuch 2008					
Pachl, J.; Systemtechnik des Schienenverkehrs, Wiesbaden 2011					
H. Freystein, „Handbuch Entwerfen von Bahnanlagen“, Hamburg 2008					
P. Neumann, „Leit- und Sicherungstechnik im Bahnbetrieb“, Hamburg 2004					

Specialization in Road Transport:

Natzschka, H.: Straßenbau – Entwurf und Bautechnik; 3rd edition 2011; Teubner Verlag, Wiesbaden

Velske S., H. Mentlein und P. Eymann: Straßenbautechnik; 7th edition 2013; Werner Verlag, Düsseldorf

Schnabel W. and D. Lohse: Grundlagen der Straßenverkehrstechnik und der Straßenverkehrsplanung, vol. 1

Straßenverkehrstechnik; 3rd edition 2011; Beuth Verlag, Berlin/Kirschbaum Verlag, Bonn

Forschungsgesellschaft für Straßen- und Verkehrswesen (FGSV):

Handbuch für die Bemessung von Straßenverkehrsanlagen (HBS)

Richtlinien für die Standardisierung des Oberbaus von Verkehrsflächen (RStO)

Richtlinien für die Anlage von Autobahnen (RAA)

Richtlinien für die Anlage von Landstraßen (RAL)

Richtlinien für die Anlage von Stadtstraßen (RASt)

SPM 11 Integrated Network Planning

No: SPM 11	Specialization Module: Integrated Network Planning	Language: German		Credit points: 8	
		Frequency: each spring term		Term: 6	
		Workload: 240 hrs.		Form of examination: KL60+PA	
	Prerequisites for participation: none	Contact hours: 84 hrs.	Self-study hours: 156 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Integrated Network Planning		Prof. Dr. Menzel		V	2
Case Studies of Integrated Network Planning				V+Ü	1+1
Integrated Interface Planning				V+Ü	1+1
This module is used for the following degree programs: LIM, LOM, LOP, MPM, WMV					
Contents					
<u>Integrated Network Planning/Case Studies of Integrated Network Planning:</u>					
<ul style="list-style-type: none"> - Theoretical background of integrated planning in the transport sector - Aspects of transdisciplinary planning, planning and project processes - Theories of individual modes of transport in the overall context - Complementary case studies, some of whose backgrounds are explored in depth in short field trips and exercises 					
<u>Integrated Interface Planning:</u>					
<ul style="list-style-type: none"> - Relevance of transport links as a basis for multi- and intermodal mobility, determinants of mobility, current planning strategies, approaches and measures as well as planning tools - Entire range of intra- and intermodal interfaces of transport systems - Practical examples as a basis for discussion with regard to their respective system-technical characteristics as well as with regard to organizational aspects - Discussion of the mobile station concept - Discussion of business models and economic constraints of complex travel chains across multiple intra- and intermodal interfaces - Demand- or behavior-oriented interventions to promote multimodal mobility under the umbrella term of mobility management 					
Learning objectives and competencies to be imparted					
<u>Integrated Network Planning/Case Studies of Integrated Network Planning:</u>					
<p>Upon successful completion of the course, students will have methodological and conceptual competencies in integrated urban, transportation, and environmental planning, as well as meta-level systems theory and its areas of application. In the lecture part, the taxonomy levels "analysis" and "synthesis" have to be achieved for the most part in order to pass with at least the grade "good". To achieve the grade 1.0 (very good), additional knowledge must be developed through independent study. To pass with a "sufficient" 4.0, the "analysis" taxonomy level must be achieved in at least core aspects of traffic. Accordingly, the exam is divided into three equal parts: "collection questions", "comprehension questions" and "transfer questions". Correct answers to the "collection questions" and at least half of the "comprehension questions" correspond to reaching the taxonomy level "analysis" in core aspects. Content transfer performances with aspects of traffic object planning and mobility management correspond to taxonomy level "assessment" and can lead to an improvement of the performance in the exam (also to a pass).</p>					
<u>Integrated Interface Planning:</u>					

Based on the task given, students demonstrate skills in analyzing, adapting, and reflecting on issues in integrated interface planning.

Literature and teaching aids

Literature and working materials as well as competent contact persons will be presented and named during the course.

Catalog of Mandatory Elective Subjects (WPF)

WPF 1 Practical Philosophy - erroneous paths you'd better leave to others

No: WPF 1	Mandatory elective module: Practical Philosophy - erroneous paths you'd better leave to others	Language: German		Credit points: 2	
		Frequency: each fall term		Term: 5	
	Prerequisites for participation: none	Workload: 60 hrs.		Form of examination: PR	
Contact hours: 30 hrs.		Self-study hours: 30 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Practical Philosophy - erroneous paths you'd better leave to others		Prof. Dr. Ernst		S	2
This module is used for the following degree programs: cross-curricular					
Contents					
<p>Older structures in the human brain can lead to thinking errors when dealing with contemporary problems, which remain undetected because their perception requires special attention. The brain just does not think by itself that it sometimes does not think correctly.</p> <p>Independent work on short case studies that highlight errors in one's logic.</p>					
Learning objectives and competencies to be imparted					
<p>Students know flaws in their reasoning that lead to behavior that is not useful to them. They understand basic structures of the human brain and their influence on cognitive thinking. They analyze short case studies and reenact the unfavorable thinking patterns presented in them. They transfer these thinking patterns to their own thinking and evaluate the influence of their own thinking on their behavior.</p>					
Literature and teaching aids					
<p>Dobelli, R. (2015): Die Kunst des Klaren Denkens, 52 Denkfehler, die Sie lieber anderen überlassen, München. Dobelli, R. (2015): Die Kunst des klugen Handelns, 52 Irrwege, die Sie besser anderen überlassen, München. Kahnemann, D. (2012): Schnelles denken, langsames denken, München. Hessen, J. (1964): Lehrbuch der Philosophie, München</p>					

WPF 2 International Summer School Traffic and Infrastructure

No: WPF 2	Mandatory elective module: International Summer School Traffic and Infrastructure	Language: English		Credit points: 2	
		Frequency: each summer term at changing locations		Term: 4 / 6	
	Prerequisites for participation: none	Workload: 60 hrs.		Form of examination: PA	
Contact hours: 28 hrs.		Self-study hours: 32 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Summer School with Széchenyi István University (Hungary)		Prof. sc. ETH Santel		S	2
The module is used for the following courses of study: cross-curricular					
Contents					
<p>In addition to input sessions to impart necessary knowledge, the focus is on working on a practical example. Field trips to the study site as well as to best-practice applications are part of the content, as is work with traffic models and simulations.</p> <p>Within one week, groups work on, document and present a traffic-related issue based on a practical example in the region.</p> <p>The summer school alternately takes place at Ostfalia University in Salzgitter and at Széchenyi István University in Győr.</p>					
Learning objectives and competencies to be imparted					
<p>Upon successful participation, students possess methodological and conceptual competencies in all areas of traffic planning starting from the superordinate level of traffic development planning up to concrete traffic object planning.</p> <p>During the summer school, students consolidate and expand their theoretical knowledge based on a practical example as well as their social skills.</p>					
Literature and teaching aids					
Literature and working materials as well as competent contact persons will be presented during the course.					

WPF 3 Cost and Activity Accounting Goods Transport Land/Sea

No: WPF 3	Mandatory elective module: Cost and Activity Accounting Goods Transport Land/Sea	Language: German		Credit points: 2	
		Frequency: each spring term		Term: 6	
	Prerequisites for participation: none	Workload: 60 hrs.		Form of examination: KL60 / PR / RE / HA	
Contact hours: 28 hrs.		Self-study hours: 32 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Cost and Activity Accounting Goods Transport Land/Sea		Prof. Dr. Ordemann		V+Ü	1+1
This module is used for the following degree programs: cross-curricular					
Contents					
In addition to the content taught in various transport and logistics courses and the course "Cost Accounting and Cost Management", this elective deals with a more in-depth and specialized study of cost and activity accounting, including price calculation. The focus of this course will be the establishment of cost and activity accounting in the area of truck transports as well as container maritime transports.					
Learning objectives and competencies to be imparted					
The students are able to develop a cost and activity accounting in the mentioned area (see contents) in corresponding companies.					
Literature and teaching aids					
Lecture notes (will be provided as PDF file)					
Kerler, S. W., Fit für den Preiskampf, 2nd edition, Munich.					
Wittenbrink, P, Transportmanagement, 2nd edition, Wiesbaden.					
Eberhardt, M., Egger, N., Weckbach, N., Rechnungswesen – Spedition und Logistikleistung, 17th edition Braunschweig 2017					
Drewry Maritime Research (ed.), Ship Operating Costs Annual Review and Forecast, Annual Report, op. cit, latest ed.					
Schönknecht, A.: Maritime Containerlogistik, Heidelberg 2009					
Ordemann, F., Szenario für eine Seehafenkooperation im Bereich des Containerverkehrs, ed. by WWF-Deutschland, Berlin 2013					
Ordemann, F., Kooperation der deutschen Containerseehäfen -hat eine größere Wirkung als Flussvertiefungen, Salzgitter 2015					

WPF 4 Current Issues in the Maritime and Seaport Industries

No: WPF 4	Mandatory elective module: Current Issues in the Maritime and Seaport Industries	Language: German		Credit points: 2	
		Frequency: each fall term		Term: 5	
	Prerequisites for participation: none	Workload: 60 hrs.		Form of examination: KL60 / PR / RE / HA	
Contact hours: 30 hrs.		Self-study hours: 30 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Current Issues in the Maritime and Seaport Industries		Prof. Dr. Ordemann		V+Ü	1+1
This module is used for the following degree programs: cross-curricular					
Contents					
<p>The maritime industry is a dynamically developing transport market segment. Changes range from parts of the market regime, such as the softening and eventual abolition of shipping conferences in 2008, to procedural changes, such as the introduction of blockchain technology, for which well-known shipping companies are pioneering logistics. Accordingly, special topics are permanently offered, which are treated here and which represent a supplement to a part of the compulsory module "Logistics Service Management". Similarly, the seaport industry must adapt to the changes taking place in the maritime sector. The importance of the German seaports in the context of their competitors and their position worldwide, the factors influencing seaport competition, and the diversity of the typical logistics service providers operating at the seaport location are taught.</p>					
Learning objectives and competencies to be imparted					
Students have structural knowledge and current knowledge of the maritime and seaport industries.					
Literature and teaching aids					
<p>Lecture notes (will be provided as PDF file) Hölser, T (Hrsg.), Grundwissen Spedition und Logistik, Lorenz 1, 25th edition, DVV, Hamburg 2016 Schönknecht, A.: Maritime Containerlogistik, Heidelberg 2009 Ordemann, F., Szenario für eine Seehafenkooperation im Bereich des Containerverkehrs, ed. by WWF-Deutschland, Berlin 2013 Ordemann, F., Kooperation der deutschen Containerseehäfen -hat eine größere Wirkung als Flussvertiefungen, Salzgitter 2015</p>					

WPF 5 Introduction to SAP

No: WPF 5	Mandatory elective module: Introduction to SAP	Language: German		Credit points: 2
		Frequency: each fall and spring term		Term: 5 / 6 / 7
	Prerequisites for participation: none	Workload: 60 hrs.		Form of examination: KL60
Contact hours: 00/001		Self-study hours: 00/001		
Courses:		Module commissioner:	Teaching and learning types:	Scope (SWS):
Introduction to SAP		Prof. Dr. Brey	V+L	1+1
The module is used for the following courses of study: cross-curricular				
Learning objectives and competencies to be imparted				
<p>After participation, students master the principle transaction-oriented business process modeling and processing within the SAP ERP system. To this end, students are taught how ERP systems work and how they are structured, using the SAP Business Suite as an example. Business processes specified in case studies are implemented and analyzed in SAP.</p> <p>In this way, the students will gain the knowledge they need to understand how SAP works and to work with the system in a company later on.</p>				
Contents				
<ul style="list-style-type: none"> - Theoretical basics of the SAP ERP architecture - General operation of the SAP GUI - Mapping of business structures in SAP - Interactive representation of business processes and their integration using the example of the SAP model companies IDES and/or GBI 				
Literature and teaching aids				
<p>Lecture notes and manuals Fallstudien im Rahmen des University Alliances Program der SAP AG Frick et. al : Grundkurs SAP ERP, vieweg, 1st edition 2008 Benz/ Höflinger : Logistikprozesse mit SAP, vieweg + Teubner, 2nd edition 2008</p>				

WPF 6 Practical Modeling and Robot Programming

No: WPF 6	Mandatory elective module: Practical Modeling and Robot Programming	Language: German		Credit points: 2	
		Frequency: each fall and spring term		Term: from the 3rd term onwards	
	Prerequisites for participation: none	Workload: 60 hrs.		Form of examination: KL30 / PR / RE / PA	
Contact hours: 30/28 hrs.		Self-study hours: 30/32 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Practical Modeling and Robot Programming		Prof. Dr. Brey		V+Ü	1+1
This module is used for the following degree programs: cross-curricular					
Contents Theory: <ul style="list-style-type: none"> - Object-oriented programming - General information about object orientation - Basic structures of OOP - Variables and methods - Expressions, statements and blocks - Control structures - Interfaces Laboratory: <ul style="list-style-type: none"> - Modeling - Programming in general - Robotics programming 					
Learning objectives and competencies to be imparted The goal is to impart competencies in the field of model building by practically translating real-world issues into adequate computer models in standard environments (operating system: Linux, programming language: JAVA, Python, etc.). Students deepen their knowledge acquired in "Introduction to Computer Science" using practical examples (including the LEGO MINDSTORMS EV3 system) and learn how to program sensors and actuators. After successful participation, students can understand mathematical methods of digital signal processing, create their own programs and design basic algorithms for controlling robot systems.					
Literature and teaching aids Lecture notes Maximilian Schöbel, Thorsten Leimbach, Beate Jost: Roberta - EV3 Programmieren mit Java - Lernen mit Robotern. Fraunhofer Verlag 2015 Various JAVA textbooks					

WPF 7 Management of Working Time

No: WPF 7	Mandatory elective module: Management of Working Time	Language: German		Credit points: 2	
		Frequency: each fall and spring term		Term: 4 / 5 / 6 / 7	
	Prerequisites for participation: none	Workload: 60 hrs.		Form of examination: RE / HA	
Contact hours: 30/28 hrs.		Self-study hours: 30/32 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Management of Working Time		Prof. Dr. Ernst		S	1+1
This module is used for the following degree programs: cross-curricular					
Contents					
<ul style="list-style-type: none"> - Legal system (Working Hours Act, collective agreements, company agreements) - Basic pattern of working time organization - Trends towards flexibility 					
Learning objectives and competencies to be imparted					
<p>The students recognize the strategies and flexible processes of personnel responsibility as a target for real innovation and learn to implement them especially in companies of the transportation sector.</p> <p>Knowledge of the relevant economic and legal framework. Knowledge of current work schedule models including basic patterns. Competence to develop models that are appropriate to the subject matter and interests.</p>					
Literature and teaching aids					
<p>Hellert, U. (2018): Arbeitszeitmodelle der Zukunft. Arbeitszeiten flexibel und attraktiv gestalten, 2nd edition, Freiburg/Munich/Stuttgart</p> <p>Hoff, A. (2015): Gestaltung betrieblicher Arbeitszeitsysteme. Ein Überblick für die Praxis, Wiesbaden</p> <p>Pletke, M./Schrader, P./Siebert, J. et al (2017): Rechtshandbuch Flexible Arbeit. Flexible Beschäftigungsverhältnisse, Personalanpassung, Vergütungssysteme, Arbeitszeitmodelle, Aufgabenänderung, München</p> <p>Reh, D. A./Kilz, G. (1996): Die Neugestaltung der Arbeitszeit als Gegenstand des betrieblichen Innovationsmanagements, 1st edition, Baden-Baden.</p> <p>Reh, D. A./Kilz, G. (1996): Innovative Arbeitszeitsysteme nach dem neuen Arbeitszeitrecht, Berlin</p> <p>Schaub, G. (2017): Arbeitsrechts-Handbuch. Systematische Darstellung und Nachschlagewerk für die Praxis, 17th edition, Munich</p>					

WPF 8 Management of Non-Profit Organizations

No: WPF 8	Mandatory elective module: Management of Non-Profit Organizations	Language: German		Credit points: 2	
		Frequency: each spring term		Term: 4 / 6	
	Prerequisites for participation: none	Workload: 60 hrs.		Form of examination: RE / HA	
Contact hours: 28 hrs.		Self-study hours: 32 hrs.			
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Management of Non-Profit Organizations		Prof. Dr. Ernst		S	1+1
This module is used for the following degree programs: cross-curricular					
Contents					
<ul style="list-style-type: none"> - Legal system (European social law, SGB I-XII) - Basic pattern of the social system - Management approaches 					
Learning objectives and competencies to be imparted					
<p>Students will learn about the unique structures of the non-profit sector. At the same time, the relevance of the logics that apply there should also be recognized for profit organizations. In particular, students should be able to transfer approaches of NPO management to the profit sector, such as corporate health management, corporate culture.</p> <p>Knowledge of the relevant economic, social and legal framework. Knowledge of current concepts of management of NPOs. Competence to develop appropriate management strategies to achieve organizational goals.</p>					
Literature and teaching aids					
<p>Arnold, U./Grunwald, K./Maelicke, B., eds. (2014): Lehrbuch der Sozialwirtschaft, 4th edition, Baden-Baden Decker, F. (1997): Das große Handbuch Management für soziale Institutionen, Landsberg/Lech Halfar, B. (1999): Finanzierung sozialer Dienste und Einrichtungen, Baden-Baden Haller, S. (2017): Dienstleistungsmanagement: Grundlagen, Konzepte, Instrumente, 7th edition, Wiesbaden Reh, D. A./Kilz, G. (1997): Der Weg in die Teilzeitgesellschaft, Berlin Reh, D. A./Kilz, G. (1997): Einführung in die Telearbeit, Berlin Schauhoff, S./Bott, H. (2010): Handbuch der Gemeinnützigkeit: Verein, Stiftung, GmbH; Recht, Steuern, Personal, 3rd edition, Munich Simsa, R./Meyer, M./Badelt, C., Hrsg. (2013): Handbuch der Nonprofit-Organisation: Strukturen und Management, 5th edition, Stuttgart Simsa, R. (2016): Leadership in Non-Profit-Organisationen: Die Kunst der Führung ohne Profitdenken, 2nd edition, Wiley, Stöger, R./Salcher, M. (2006): NPOs erfolgreich führen: Handbuch für Nonprofit-Organisationen in Deutschland, Österreich und der Schweiz, Stuttgart Wöhe, G./Döring, U./Brösel, G. (2016): Einführung in die Allgemeine Betriebswirtschaftslehre, 26th edition, Munich</p>					

WPF 9 Rail Transport in Practice

No: WPF 9	Mandatory module: Rail Transport in Practice	Language: German		Credit points: 2	
		Frequency: each spring term		Term: from the 4th Term	
		Workload: 60 hrs.		Form of examination: KL30	
	Prerequisites for participation: none	Contact hours: 28 hrs.	Self-study hours: 32 hrs.		
Courses:		Module commissioner:		Teaching and learning types:	Scope (SWS):
Rail Transport in Practice		Prof. Dr. Santel		S	2
This module is used for the following degree programs: cross-curricular					
Contents					
<p>After some basic introductory lectures: visits to railroad companies in Lower Saxony, experts for railroad technology, system house Siemens, etc., including a two-day seminar "Railway Experience Days" in BS (ER.bahn-consulting GmbH) with two short theory blocks on railroad systems and vehicle technologies and subsequent practical activities, e.g. in signal boxes, on the traction unit or when coupling wagon trains</p>					
Learning objectives and competencies to be imparted					
<p>This module provides an in-depth look at the day-to-day practice of rail transportation for interested students from transportation and logistics programs. In addition to the transfer of knowledge in terms of content, contacts in the rail industry are made, which can be important for the students' further careers. Direct exchange with players on the ground paints the real picture of this industry.</p>					
Literature and teaching aids					
<p>Janicki, Jürgen (2016): "Systemwissen Eisenbahn", DB-Fachbuch, Bahn-Fachverlag, ISBN 978-3-943214-15-4 Janicki, Jürgen; Reinhard, Horst (2008): „Schienenfahrzeugtechnik“, DB-Fachbuch, Bahn-Fachverlag, ISBN 978-3-9808002-5-9 Jänsch, Eberhard (Ed.) (2016): „Handbuch: Das System Bahn“, Eurailpress, ISBN 978-3-87154-511-5 Lichtberger, Bernhard (2010): „Handbuch Gleis: Unterbau, Oberbau, Instandhaltung, Wirtschaftlichkeit“, Eurailpress, ISBN 978-3-7771-0400-3 Janicki, J. (2002): „Fahrzeugtechnik - Triebfahrzeuge“, Heidelberg Breuer, B. (2006): „Bremsenhandbuch - Grundlagen, Komponenten, Systeme, Fahrdynamik“, Wiesbaden IVE, Universität Hannover (Hrsg.) (2006) „Handbuch Dynamis – Fahrdynamische Berechnungen beliebiger Zugkonfigurationen“, Hannover Wende, D. (2003), "Fahrdynamik des Schienenverkehrs", Stuttgart</p>					

