FH·W-S

University of Applied Sciences
Würzburg-Schweinfurt

Faculty of Business and Engineering

Module Handbook for the B.Eng. Programme Logistics

Version applies to all students who began their studies on 1 October 2017 or later

Basis: Study and examination regulations in the version dated 28 June 2019

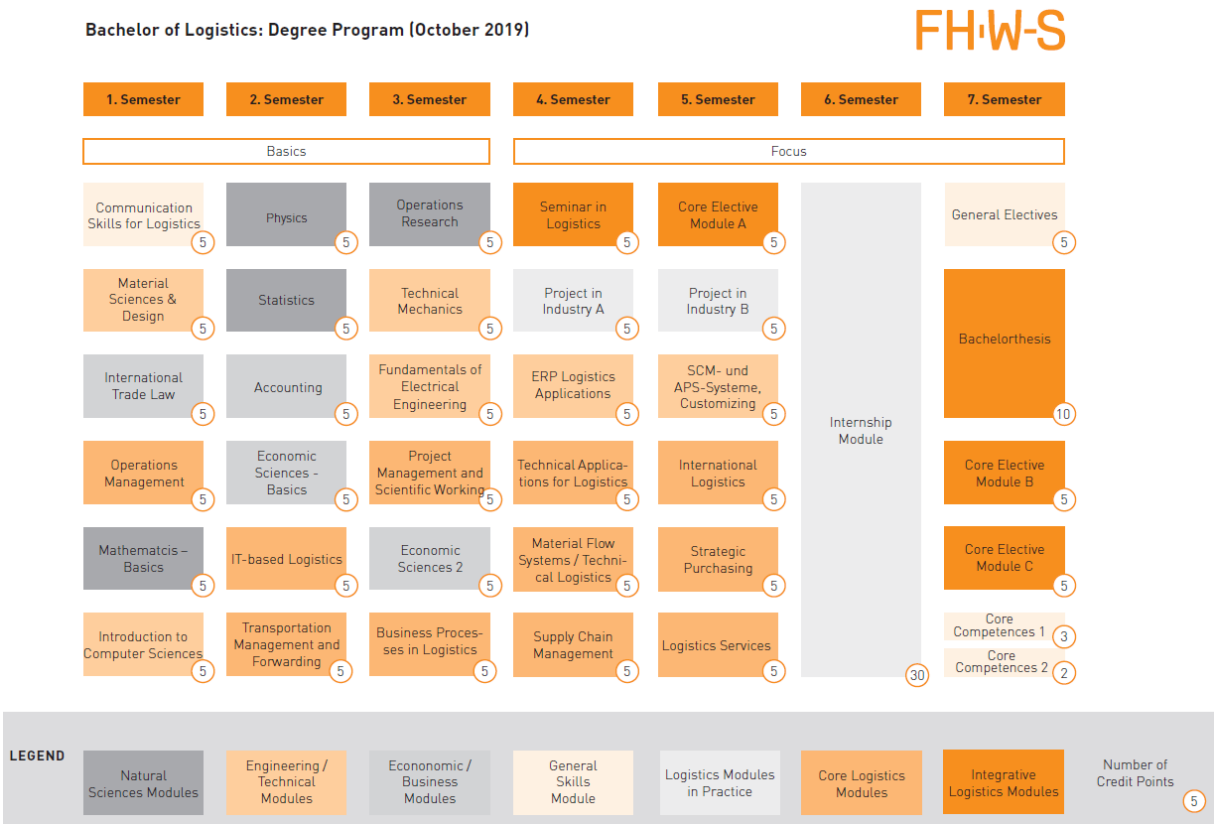
Effective from 1 October 2019

Last updated: 16 October 2019

Contents

Preliminary Remarks

This module handbook contains descriptions of all modules and their courses that have to be completed by students of the Bachelor's programme Logistics (IBL) at the University of Applied Sciences Würzburg-Schweinfurt. The following overview shows the course structure of the degree programme.



Details on the first and second part of studies contain the description of all those modules laid down in to the Appendix of the Study and Examination Regulations. In the second part of studies students have to complete three Core Elective Modules (ELMA, ELMB, ELMC) from a variety of modules. Possible modules are listed in Appendix 1. From a variety of courses for the module Core Competences 2 (COC2) students have to complete one. Possible courses are listed in Appendix 2.

In general, module descriptions are written in the respective language of instruction/examination according to the Study and Examination Regulations.

Due to changing conditions (e.g. newly appointed professors), actual teaching staff and times/dates may vary from the details given in this module handbook. Only the Curriculum published for the respective semester is binding; it is decided upon every semester and published in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters" .

First Part of Studies, Programme Semester 1 to 3

MATB - Mathematics - Basics

Module profile				
Module ID	MATB			
Module name	Mathematics - Basics			
Exam number according to degree programme	BWW -	IBE 3811100	BLO -	IBL 3911100
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	6			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 90	Amount of Self-study time 60	
Teaching format	SU (=seminar-like lecture) (4 SWS), Ü (=exercise course) (2 SWS)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Fabeck			
Lecturer(s)	Dr. Bauchspieß; Prof. Dr. Bier; Prof. Dr. Bletz-Siebert; Prof. Dr. Diet-helm; Prof. Dr. Fabeck; Dr. Latour; Prof. Dr. H.-J. Meier; Prof. Dr. H. Walter; Prof. Dr. Wimmer; Prof. Dr. Zirkelbach			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 1st semester Core module -	- - - -	IBL 1st semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Mathematical knowledge on advanced school level: elementary logic, sets, functions (in particular, real-valued functions of a real variable).			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Understand and use fundamental mathematical concepts and methods that are necessary for technically oriented modules in higher semesters. • Solve mathematical routine tasks in differential and integral calculus of one real variable. • Use methods from differential and integral calculus to solve practical problems. • Select appropriate models and methods for solving simple problems from the fields of industry and economy.
Contents	• Sets and numbers • Complex numbers • Functions of real variables • Limits and continuity • Differential calculus of a single real variable • Integral calculus of a single real variable • Vectors
Literature	• Ayres, F./Mendelson, E. (2013): *Schaum's Outline of Calculus*. New York: McGraw-Hill. • Stewart, J. (2015): *Calculus: Early Transcendentals - International Metric Edition*, 8th ed. Andover: Cengage Learning EMEA. • Strang, G. (2017): *Calculus*, 3rd ed. Wellesley: Wellesley-Cambridge Press.

INTL - International Trade Law

Module profile				
Module ID	INTL			
Module name	International Trade Law			
Exam number according to degree programme	BWW -	IBE 3812400	BLO -	IBL 3921200
Duration	1 semester			
Frequency	Winter and summer semester (WS in IBL; SS in IBE)			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Ehret			
Lecturer(s)	Prof. Dr. Ehret; Prof. Dr. Meyer			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 2nd semester Core module -	- - - -	IBL 1st semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Classify facts with reference to private business law correctly and to judge them in a correct legal way. • Explain the basic institutions of private business law. • Make operational decisions also taking into account legal norms. • Explain the conclusion of contracts and the creation of statutory obligations. • Interpret contracts. • Explain questions of ownership and possession. • Recognize the influence of commercial law on civil law.
Contents	Fundamentals of international trade law, i.e. WTO and GATT, CISG, and in particular: • Conclusion and implementation of contracts and pre-contractual obligations, including the right to disrupt performance • Principles of statutory obligations • Important players in international trade • Customs and taxes • Introduction to international mergers & acquisitions. • Mechanism of dispute resolution: state courts and arbitration panels
Literature	• Schweizer, I./Fountoulakis, C./Dimsey, M. (2019): International Sales Law, a guide to the CISG, 3rd edition, Oxford: Hart Publishing. • Herdegen, M. (2016): Principles of International Economic Law, 2nd edition, Oxford: Oxford University Press. • August, R.A./Mayer, D./Bixby, M.B (2012): International Business Law: International Edition: Text, Cases, and Readings, 6th edition, London: Pearson Education Limited. • Kratz, A.W. (2006): Remedies for breach of contract under the CISG. International review of law and economics, pages 378-396, volume 25, Issue 3, Amsterdam: Elsevier B.V.

ECOM - Communication Skills for Logistics

Module profile				
Module ID	ECOM			
Module name	Communication Skills for Logistics			
Exam number according to degree programme	BWW -	IBE -	BLO 3381300	IBL 3911300
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Wunderlich			
Lecturer(s)	Mr. Rogers; Prof. Dr. Wunderlich			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	BLO 1st semester Core module -	- - - -	IBL 1st semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Recommended entry level: B2			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	Präsentation m. E. (= successfully passed presentation (ungraded))
Examination - type	sP (= written examination)
Examination - length/format	90-120 minutes
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Understand with ease most types of written and particularly spoken linguistic interaction (e-mail writing, discussions, and, particularly, oral presentations using PowerPoint). • Use a differentiated academic and subject-specific vocabulary. • Apply their knowledge in correct grammatical and stylistic structures.
Contents	• language learning skills • presenting in English: language and strategies • speaking on logistics-related topics such as transport, planning, containers, supply-chain-management, outsourcing to China, ethical sourcing, operations management, and production • discussing and reading densely-woven texts on logistics-related topics • writing logistics-related texts and e-mails • politeness strategies and developing intercultural competence
Literature	• Emmerson, P. (2007): Business English Handbook Advanced, London: Macmillan Education. • Grant, D.B. et al. (2006): Fundamentals of Logistics Management, European Edition, London: Pearson Education. • Grussendorf, M. (2010): English for Logistics, Berlin: Cornelsen. • Pilbeam, A./O'Driscoll, N. (2010): Market Leader Logistics Management, London: Pearson Education. • Powell, M. (2010): Dynamic Presentations, Cambridge: Cambridge University Press. • Wallwork, A. (2014): E-mail and Commercial Correspondence. A Guide to Professional English, BerlinSpringer Science + Business Media. • Further literature and materials, such as topical journal or newspaper articles related to the field, will be presented by the instructor in the course and on e-learning as need arises.

COSC - Introduction to Computer Sciences

Module profile				
Module ID	COSC			
Module name	Introduction to Computer Sciences			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL 3911400
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture) (2 SWS), Ü (= tutorial) (2 SWS)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Hennermann			
Lecturer(s)	Mr. Rott			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	- - - -	IBL 1st semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90 minutes
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Apply methods from various areas of computer science. • Apply the skills they acquired to practice-oriented case examples. This logical thinking should be promoted.
Contents	• Fundamental terms of computer science • Principle workflow • Display of information • Methods and tools of computer science • Basics of information- and database-systems in companies • Basics of business process modelling • Building a real database management system • Basic SQL
Literature	Sargunaraj, J.: Introduction to Computer Science, Pearson Education.

MSDE - Material Sciences and Design

Module profile				
Module ID	MSDE			
Module name	Material Sciences & Design			
Exam number according to degree programme	BWW -	IBE 3811400	BLO -	IBL 3921500
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. A. Hofmann			
Lecturer(s)	Prof. Dr. Bunsen; Prof. Dr. Felsner; Prof. Dr. A. Hofmann; Prof. Dr. J. Meyer; Prof. Dr. T. Müller; Prof. Dr. Spielfeld; Prof. Dr. Tiesler; Prof. Dr. Vogt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 1st semester Core module -	- - - -	IBL 1st semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Understand and judge the behaviour of different materials. • Draw and interpret technical drawings. • Name the most important machine components and their functions. • Comprehend and explain the function and applicability of technical standards, also with regard to commonly used production techniques.
Contents	**1. Material Sciences** • Basic materials used in crystal development, thermal treatment, alloy formation • Elastic and plastic deformation • Mechanical and material properties in physics **2. Construction** 2.1 Standards and standard parts in general 2.2 Technical drawing (lecture with lab) • Introduction, functions, format, text fields, parts lists • Display modes, projections, sections • Dimensioning • Tolerances: general, dimensional, form, geometrical • Surface parameters • Display of special machine elements (screws, bearings, gaskets) 2.3 Machine elements • General requirements and classifications • Screws (not: calculation) • Bearings (not: design) 2.4 Functional design • Overview of production techniques • Design guidelines
Literature	• Callister, W.D./Rethwisch, D.G. (2014): Materials Science and Engineering, 9. Auflage, Hoboken: Wiley & Sons. • Parthasarathy, N.S./Murali, V. (2015): Engineering Drawing, Delhi: Oxford University Press. • Childs, P. (2014): Mechanical design engineering handbook, Amsterdam: Elsevier Butterworth-Heinemann. • Grote, K.-H. (2009): Springer handbook of mechanical engineering, New York: Springer. • Schaeffler Technical Pocket Guide (2017), Herzogenaurach: Schaeffler Technologies AG & Co.KG, available for free at Schaeffler's Web portal, see „media".

OPMG - Operations Management

Module profile				
Module ID	OPMG			
Module name	Operations Management			
Exam number according to degree programme	BWW -	IBE -	BLO 3331600	IBL 3911600
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture) (2 SWS); Ü (= exercise course) (2 SWS)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Machholz			
Lecturer(s)	Prof. Dr. Machholz			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 1st semester Core module -	IBL 1st semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice) • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Identify, explain and compile the basic principles of planning, manufacturing and distribution of goods or services. • Understand and evaluate the major developments in Supply chain management. • Examine and assess state-of-the-art ways of operations using many real-life examples from various companies or industries. • Deepen the above mentioned theoretical parts using the practical processes and workflows in the SAP logistics lab.
Contents	• Introduction to Operations, basic process understanding (input/operations/output) for delivering products & services • How to manage company performance: Capacity, flexibility, productivity /quality, costs, time - interdependencies and trade-offs between these company performance parameters • Toyota Production System, 1st introduction to process optimization tools (e.g.; 6 Sigma, Lean, 5S, SMED, Poka Yoke, Ishikawa, Kaizen, KVP) using easy day-to-day life examples • Order fulfilment processes /S&OP process- involved functions, planning process, priority settings/trade-offs/frozen-zones, final agreed upon plan • Bill of Materials (BoM) - many easy examples, where used lists, recall campaigns • Routing, scheduling, backwards/forwards planning, ordering points and required quantities with many easy examples • MRP II /Materials Requirements planning, net requirement calculations • Order processing and distribution to final customer, good returns, how to achieve end-to-end traceability along the entire SC The lectures are reflected in a model plant (SimLog Industry) here students can experience Operations Management in a realistic SAP working environment. At Sim-Log students see operations in a nutshell.
Literature	• Heizer, J./Render, B. (2010): Operations Management, 10e. Essex : Pearson Education. • Slack, N./Chambers, S./Johnston, R./Betts, A. (2009): Operations and Process Management, 2nd ed. Harlow: Financial Times Prentice Hall • Waller, D. (2003): Operations Management - A Supply Chain Approach, 2nd ed. London : Thomson Learning.

TMFO - Transportation Management and Forwarding

Module profile				
Module ID	TMFO			
Module name	Transportation Management and Forwarding			
Exam number according to degree programme	BWW -	IBE -	BLO 3382100	IBL 3912100
Duration	1 semester			
Frequency	Summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (= seminar-like lecture) (2 SWS), S (= seminar) (2 SWS)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schmidt			
Lecturer(s)	Prof. Dr. Schmidt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 2nd semester Core module -	IBL 2nd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice) • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Define and name important trends, meanings and goals of logistics. • Explain the importance of transport and logistics for the economic success of companies in industry, trade and logistics services. • Use network-based models of logistics to identify important managerial improvements in logistics and transportation systems. • Compare modes in land transportation and select the right transportation mode according to specific requirements of different types of freight, infrastructural requirements and customer segments. • Explain the different roles, business models, technical infrastructure and managerial challenges between the market players in road and rail transportation.
Contents	• Key terms in Transport, Traffic and Logistics • Management aspects in the order to payment process of a freight forwarder • Basic components of a transportation system • Overview about the different transportation modes (road, rail, sea/water, air) • Essential features for the comparison of transportation sys-tems • Market segments, weight classes, infrastructure and business models (General cargo/groupage, CEP, FTL, Contract Logistics) in road transportation • Value chains, technical infrastructure and key operations in rail transportation • Overview about the German market of inland waterway ship-ping (order flow, regulations, main routes, business models)
Literature	• Bowersox, D./Closs, D./Cooper, B. et.al (2013): Supply Chain Logistics Management. 4th ed. New York: McGraw-Hill (Chapters: Transport Infrastructure, Transportation Management, Warehouse Management, Packaging). • Gubbins, E. (2009): Managing Transport Operations. 3rd ed. The Chartered Institute of Logistics and Transport (UK), London: Kogan Page. • Simchi-Levi, D./Kaminsky, P./Simchi-Levi, E. (2003): Designing & Managing the Supply Chain. Concepts, Strategies & Case Studies. 2nd ed. Boston: McGraw-Hill.

ACCO - Accounting

Module profile				
Module ID	ACCO			
Module name	Accounting			
Exam number according to degree programme	BWW -	IBE 3823400	BLO -	IBL 3922200
Duration	1 semester			
Frequency	Winter and summer semester (WS in IBE; SS in IBL)			
Credit hours (SWS)	6			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 90	Amount of Self-study time 60	
Teaching format	SU (= seminar-like lecture)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Ankenbrand			
Lecturer(s)	Prof. Dr. Ankenbrand; Prof. Dr. Kraus; Prof. Dr. M. Walter			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 3rd semester Core module -	- - - -	IBL 2nd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module ECSB.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Explain the differences between financial and managerial accounting. • Identify the basic principles of annual financial statements. • Solve simple questions of approach and assessment. • Classify cost accounting terms. • Interpret cost trends and apply overhead costs. • Apply activity based costing. • Explain the concept of the time value of money. • Apply methods of investment calculation adequate to the target.
Contents	**Financial Accounting** • Reasons for Accounting Differences and Need for Globally Converged Accounting Standards • The International Accounting Standards Board • Role and Structure of the IFRS • Major Accounting Issues under IFRS **Management Accounting** • Basics of cost- and activity accounting • Cost type calculations • Cost center calculations • Overhead and cost unit calculations • Basics of controlling **Basic Corporate Finance** • Time Value and Investment Decisions • Financial Planning • Risk and Return Relationship • Risk and uncertainty in investment decisions • Long and short term finance • Cash and Inventory management
Literature	• Rich, J./Jones, J./Heitger, D./Mowen, M./Hansen, D. (2012): Financial and Managerial Ac-counting. The Cornerstone of Business Decisions, 2nd edition, Boston: Cengage Learning. • Britton, A./Hoogendoorn, M./Jorissen, A./van Mourik, C./Alexander, D.(2014): International Financial Reporting and Analysis, Boston: Cengage Learning. • Stolowly, H./Lebas, M./Ding, Y.(2017): Financial Accounting and Reporting A Global Perspective, 5th edition, Boston: Cengage Learning. • Weber, J./Schäfer, U. (2008): Introduction to Controlling 1st edition. Stuttgart: Schäffer-Poeschel. • Brealey, R./Myers, S./Allen, F.(2010): Principles of Corporate Finance - Concise Edition, 2nd edition, New York: McGraw-Hill Education. • Berk, J./DeMarzo, P. (2013): Corporate Finance, 3rd edition, Boston: Pearson Education.

PHYC - Physics

Module profile				
Module ID	PHYC			
Module name	Physics			
Exam number according to degree programme	BWW -	IBE 3811200	BLO -	IBL 3912300
Duration	1 semester			
Frequency	Winter and summer semester (WS in IBE; SS in IBL)			
Credit hours (SWS)	6			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attendance time 90	Amount of Self-study time 60	
Teaching format	SU (=seminar-like lecture) (4 SWS); Ü (= exercise course) (2 SWS)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Seufert			
Lecturer(s)	Dr. Davidson; Prof. Dr. Mark; Prof. Dr. Motzek; Prof. Dr. Seufert; Prof. Dr. H. Walter			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 1st semester Core module -	- - - -	IBL 2nd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequisites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Understand the importance of physics for the engineering sciences. • Describe the fundamental principles of physics and recognize the physical laws behind technological applications. • Evaluate and calculate simple mechanical and fluid-mechanical systems.
Contents	**1. Mechanics** • Basics of kinematics • Introduction to dynamics • Momentum and collisions • Rotational motion **2. Fluid mechanics** • Basics of fluid statics and fluid dynamics • The Bernoulli equation and its applications • Laminar flow • Turbulent flow • The Bernoulli equation with friction **3. Oscillations** • Simple harmonic motion • Undamped and damped harmonic oscillations
Literature	• Halliday, D./Resnick, R./Walker, J. (2014): Principles of Physics, 10th edition, New York: John Wiley & Sons. • Mosca, G./Tipler, P.A. (2007): Physics for Scientists and Engineers, 6th edition, Basingstoke: Palgrave Macmillan.

STAC - Statistics

Module profile				
Module ID	STAC			
Module name	Statistics			
Exam number according to degree programme	BWW -	IBE 3811300	BLO -	IBL 3912400
Duration	1 semester			
Frequency	Winter and summer semester (WS in IBE; SS in IBL)			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (= seminar-like lecture)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Kobmann			
Lecturer(s)	Dr. Davidson; Prof. Dr. Fabeck; Prof. Dr. Mark; Prof. Dr. Zirkelbach			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 1st semester Core module -	- - - -	IBL 2nd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Use basic terminology of statistics. • Define the role and interaction of descriptive statistics, probability calculus and inferential statistics. • Recognize and classify the implementation of these different parts of statistics into concrete statistical procedures. • Understand and classify the analysis of statistical data, the application of probability calculus to the analysis of random events, and the methodical collection of samples and their evaluation.
Contents	**1. Descriptive statistics** • Fundamentals: Fundamental notions, sampling and processing data, process of a statistical study • Analysis of univariate data: frequency distributions, measures of central tendency and of dispersion, measures of concentration • Analysis of bivariate data: dependency of variables, contingency tables, analysis of correlation, regression analysis • Selected further topics (e.g. time series analysis, smoothing, index numbers, analysis of inventory) **2. Probability calculation** • Fundamental concepts and important rules of probability calculation: events, probability space, axioms, combinatorics, theorem of Bayes • Random variables: probability functions and densities, expected value, variance, important calculation rules, important discrete and continuous distributions and their applications, e.g. in quality control, reliability and data transfer, Law of Large Numbers, central limit theorem **3. Inductive statistics** • Estimation theory, especially estimation of mean values of normally distributed variables • Hypotheses testing, especially about mean values of normally distributed variables
Literature	• Schiller, J.J./Srinivasan, R. A./Spiegel, M. R. (2013): Schaum's outline of Probability and Statistics, 4th edition, New York: McGraw-Hill. • Sullivan, M. (2017): Statistics: Informed Decisions Using Data, 5th edition, London: Pearson. • Diez, D. M./Barr, C. D./Çetinkaya-Rundel, M. (2015): OpenIntro Statistics, 3rd edition, Scotts Valley: CreateSpace Independent Publishing Platform.

ECSB - Economic Sciences - Basics

Module profile				
Module ID	ECSB			
Module name	Economic Sciences - Basics			
Exam number according to degree programme	BWW -	IBE 3821500	BLO -	IBL 3922500
Duration	1 semester			
Frequency	Winter and summer semester (WS in IBE; SS in IBL)			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Farmanara			
Lecturer(s)	Prof. Dr. Farmanara; Dr. Huttelmaier			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 1st semester Core module -	- - - -	IBL 2nd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Understand and use basic terminology of the core business functions R&D, purchasing and materials management, logistics, production, and sales. • State the central goals and most important elements of these business functions. • Recognize and classify realizations of these business function elements . • Understand and assign fundamental concepts, frameworks, and models for these business functions.
Contents	**1. Elements of general business administration:** • Constitutive corporate decisions: Location, legal form, cooperations • Structure and meaning of a balance sheet as well as a profit and loss statement **2. Business functions and value creation processes:** • Introduction into research and development/innovation management • Introduction into purchasing and materials management • Introduction into production • Introduction into sales • Secondary/supportive functions
Literature	• Nickels, W./McHugh, J./McHugh, S. (2013): Business: Connecting Principles to Practice, 2nd edition, New York: McGraw-Hill Education. • Bovee, C.L./Thill, J.V. (2016): Business in Action, 8th edition, London: Pearson. • Ebert, R.J./Griffin, R.W. (2019): Business Essentials, 12th edition, London: Pearson.

ITBL - IT-based Logistics

Module profile				
Module ID	ITBL			
Module name	IT-based Logistics			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL 3912600
Duration	1 semester			
Frequency	Summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload	Total workload	Amount of Attend-ance time	Amount of Self-study time	
Respective hours	150	60	90	
Teaching format	SU (=seminar-like lecture)			
Language of instruction	English			

Organisation				
Responsible	Mr. Senner			
Lecturer(s)	Mr. Senner			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	- - - -	IBL 2nd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Name, explain and use the most important terms, fundamentals and concepts in the area of IT-supported logistics. • To recognize and explain the importance of information and communication technology for logistics. • To understand, describe and evaluate the use of IT systems and IT solutions (IT landscapes) in the most important logistics application areas (intralogistics, inbound and outbound logistics). • To analyse and explain the implementation of business processes in central logistics sectors within specific IT applications. • To execute selected use cases of logistic processes in their basic form in an exemplary software-based manner. • To explain the latest and innovative IT technologies for the implementation and the optimization of logistic business processes and to assess the potentials (critical evaluation). • To review and evaluate integrated IT-supported logistics under economic, socioeconomic and ecological aspects (sustainability).
Contents	• Terms, fundamentals and concepts of IT-supported logistics. • Information and communication technology as the basis of IT-supported logistics processes explained using examples. • Overview of processes and application fields used in IT-supported logistics. • IT solutions and their use, as well as concepts and application from major logistic segments such as industry, trade, service providers, etc. • Functionalities of certain current IT-supported logistics solutions, such as electronic marketplaces, online shops, eConsignment, Tracking & Tracing, etc., are presented and assigned to logistical operational areas. • Practicing theoretical basics and procedures through the exemplary use of suitable IT solutions on central application examples. • General introduction to new technologies and paradigm shifts in practice, such as digitization and the technology of Internet of Things (IoT). • Consideration of IT-supported logistics under economic and socioeconomic aspects. • Current and future possibilities and opportunities of IT-supported logistics from the sustainability point of view.
Literature	• Stadtler, H./Kilger, C./Mayr, H. (2015): Supply Chain Management and Advanced Planning, 5th edition, Berlin: Springer Verlag. • Dastbaz, M./Cochrane, P. (2019): Industry 4.0 and Engineering for a Sustainable Future, Cham: Springer International Publishing. • Shimon Y. N./Ceroni, J./Jeong, W./Moghaddam, M. (2015): Revolutionizing collaboration through e-work, e-business, and e-service, Heidelberg, Springer-Verlag. • Finkenzeller, K. (2010): RFID Handbook. Fundamentals and Applications in Contactless Smart Cards, Radio Frequency Identification and Near-Field Communication, 3rd ed., Chichester: Wiley. • Dangelmaier, W./Blecken, A./Delius, R./Klöpfer, S. (2010): Lecture Notes in Business Information Processing 46, Berlin: Springer-Verlag.

OPRE - Operations Research

Module profile				
Module ID	OPRE			
Module name	Operations Research			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL 3913100
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture) (2 SWS), Ü (= exercise course) (2 SWS)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Bier			
Lecturer(s)	Prof. Dr. Bier; Prof. Dr. Zirkelbach			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	- - - -	IBL 3rd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful participation in the modules MATB and STAC.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Identify tasks related to Operations Research in business environments. • Transfer actual optimisation problems into formal models. • Analyse the structure and the complexity of optimisation problems. • Solve optimisation problems using an algorithmic approach. • Judge the quality of solution methods.
Contents	• Rating of algorithms and solutions • Classification and representations of graphs • Structural properties of graphs • Operations and algorithms on graphs (shortest paths, minimal spanning trees, cycle detection, transitive hulls, irreducible kernels) • Maximisation of flows in networks • Relation of flows and cuts • Initialisation of networks • Solution of allocation problems • Linear Programming • Network Simplex algorithm • Specific applications of optimisation algorithms in logistics
Literature	• Hillier, F. S./Lieberman, G. J. (2015): *Introduction to Operations Research*, New York: McGraw-Hill. • Bronson, R./Govindasami, N. (1997): *Operations Research*, 2nd ed. New York: McGraw-Hill. • Poler, R./Mula Bru, J./Díaz-Madroñero, M. (2014): *Operations Research Problems*, London: Springer.

TEME - Technical Mechanics

Module profile				
Module ID	TEME			
Module name	Technical Mechanics			
Exam number according to degree programme	BWW -	IBE 3812200	BLO -	IBL 3913200
Duration	1 semester			
Frequency	Winter and summer semester (WS in IBL; SS in IBE)			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attendance time 60	Amount of Self-study time 90	
Teaching format	SU (= seminar-like lecture)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schreiber			
Lecturer(s)	Prof. Dr. J. Meyer; Prof. Dr. Schreiber			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 2nd semester Core module -	- - - -	IBL 3rd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequisites for the participation in the **module**	Successful completion of the modules MATB and PHYC.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Describe the basic concepts in engineering mechanics to compose and decompose forces and moments acting on a rigid body. • Name the method of sections. • Derive and solve the governing equations in order to compute external and internal reaction forces and moments as well as stress resultants in a straight beam. • Solve basic problems in the field of static and kinetic friction. • Scrutinize their results and to judge the influence of changed parameters on their findings.
Contents	• Composition of forces and equilibrium conditions in concurrent and general systems of forces. • Characteristic properties of joints and supports • Center of Gravity, center of mass, centroids • Method of sections, Newton's Laws • Determination of support reactions and stress resultants • Planar systems of forces and rigid bodies (e. g. trusses) • Static and kinetic friction, belt friction
Literature	Gross, D./Hauger, W./Schröder, J./Wall, W./Rajapakse, N. (2012): Engineering Mechanics 1, 2nd edition, Berlin: Springer.

ELEN - Fundamentals of Electrical Engineering

Module profile				
Module ID	ELEN			
Module name	Fundamentals of Electrical Engineering			
Exam number according to degree programme	BWW -	IBE 3812300	BLO -	IBL 3913300
Duration	1 semester			
Frequency	Winter and summer semester (WS in IBL; SS in IBE)			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Arndt			
Lecturer(s)	Prof. Dr. Arndt; Prof. Dr. Mathes; Prof. Dr. Müller			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 2nd semester Core module -	- - - -	IBL 3rd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course “Studien- und Prüfungsangelegenheiten/study and exam-ination matters”.
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Understand the basic electrical terms with physical background. • Understand the laws and connections of electrical engineering. • Understand simple electrical networks (with real and complex resistances). • Apply the laws to simple electrical networks. • Calculate simple electrical networks. • Analyze simple electronic circuits.
Contents	The following topics will be covered and deepened with examples and exercises: **Part A: Basic electrical quantities and terms** • Charge, charge carrier, current flow, current density, specific resistance, temperature dependence of the resistance, electrical power and energy • Electrostatic field: field strength, field lines, electrical voltage and potential, Coulomb's law • Structure of important components: Resistance, capacitor and capacitance, coil and inductance **Part B: Analysis of DC networks** • Kirchhoff's laws • Ohm's law • Structure and calculation of networks of resitors, capacitors and inductors • Calculation methods for electrical networksvoltage/current dividers, wye-delta conversion, Norton and Thévenin sources **Part C: Alternating current technology** • Introduction to the characteristics of alternating current • Phasor diagrams and complex quantities • Basic two poles: effective resistance, inductance and capacitance • Analysis of linear circuits by complex calculation
Literature	• Hagmann, G. (2013): Grundlagen der Elektrotechnik, 16. Auflage, Aula-Verlag. • Hüning, F. (2014): The fundamentals of electrical engineering, De Gruyter Oldenbourg. • Prasad, R. (2014): Fundamentals of electrical engineering, PHI learning.

BPLO - Business Processes in Logistics

Module profile				
Module ID	BPLO			
Module name	Business Processes in Logistics			
Exam number according to degree programme	BWW -	IBE -	BLO 3383400	IBL 3913400
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture), S (= seminar), Ü (= exercise course)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Bremer			
Lecturer(s)	Prof. Dr. Bremer; Prof. Dr. Dobhan			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 3rd semester Core module -	IBL 3rd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Basic understanding of Operations Management.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice) • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Describe business processes and identify opportunities for process improvements. • Assign business resources to process activities and explain the effect of recent trends on a business process. • Explain and apply well-known forecasting methods. • Calculate the economic order quantity and recognize limitations of the applied approaches. • Describe the requirements for and analyse modern inbound logistics processes in industry, trade, and logistics services. • Explain the requirements of material staging, configure approaches to synchronize material supply with demand and use the line-back approach to design a material supply concept. • Describe the trade-offs in production control and explain production control strategies.
Contents	The course introduces business process management as an approach to align a firm's business processes with market requirements. The focus is on key intracompany logistics processes, including connections to direct customers and tier-1 suppliers. • Business Processes: Process categorization, Process Mapping with BPMN, Process improvement by applying common approaches (Lean Production, SCOR, Six Sigma) • Business Ressources: Organisational structures, effects of recent technological trends on resources and processes • Forecasting: forecasting prerequisites and characteristics, Qualitative forecasting methods (Delphi Method, Sales Force Composite), Quantitative forecasting methods (Exponential Smoothing, moving average), Forecasting error • Material Planning: Material Requirements Planning, Assumptions and characteristics of lot-sizing models, Economic order quantity with variations • Inbound logistics: Organizing the inbound flow (Time-slot management, yard management), goods receipt and put-away, Ship-to-Stock and Ship-to-Line • Synchronizing material supply with demand: Just-in-Time, Just-in-Sequence • Material staging to the shop floor: Challenges, line-back approach, order-driven and consumption-driven staging • Job-shop and flow-line production: Control trade-offs and model-based production control strategies.
Literature	• Ballou, R. H. (2004): Business Logistics Management, 5th ed. (international), Upper Saddle River: Pearson/Prentice Hall. • Chopra, S./Meindl, P. (2015): Supply Chain Management, 6th ed. (Global), Harlow: Pearson Education. • Dumas, M./La Rosa, M./Mendling, J./Reijers, H. A (2019): Fundamentals of Business Process Management, 2nd ed., Heidelberg: Springer. • Jacobs, F./Chase, R./Aquilano, N. J. (2015): Operations and Supply Chain Management, 14th ed., New York: McGraw-Hill/Irwin Publishing. • Slack, N./Brandon-Jones, A. (2018): Essentials of Operations Management, 2nd ed. Pearson Education, Harlow.

PMSW - Project Management and Scientific Working

Module profile				
Module ID	PMSW			
Module name	Project Management and Scientific Working			
Exam number according to degree programme	BWW -	IBE 3823600	BLO -	IBL 3923500
Duration	1 semester			
Frequency	Winter and summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schmidt			
Lecturer(s)	Prof. Dr. Gampl; Prof. Dr. Schmidt; Prof. Dr. Stadelmann			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 3rd semester Core module -	- - - -	IBL 3rd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	• If sP: 90 minutes • If soP: documentation report The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Describe procedures, methods and tools of conventional and agile project management. • Plan and document a project with regard to content and time framework conditions and to control it with the help of IT tools. • Identify project management problems and design solution strategies. • Design or derive a logical and coherent structure as well as research questions for seminar papers and bachelor theses. • Use the rules of correct scientific citation in a scientific work. • Identify scientific sources and methods relevant to the research question. • Develop a coherent argumentation in the work and to present the research results.
Contents	• Function, types, contents and processes of conventional project management • Content and use of basic project documents such as project proposal, project order, work-breakdown-structure and Gantt-chart • Process and resource planning in projects • Use of an IT-tool with exercises for project planning and control • Communication, teamwork, self-reflection and versatility in projects • Introduction and practice of agile project management methods • Scientific citation and citation methods • Research questions and writing an introduction • Structuring of a scientific work • Scientific methods and empirical tools • Organization and planning of the bachelor thesis • Literature research in electronic databases and selection of suitable sources • Use of writing and citation programs • Presentation of methodological and content-related results
Literature	• Aken van, J./Berends, H./Bij van der, H. (2012): Problem solving in organizations. A methodological handbook for business and management students. Cambridge: Cambridge University Press. • Campell, C. (2007): The One-Page-Project Manager, Communicate and manage any project with a single sheet of pa- per. Hoboken: Wiley. • Easterby-Smith, M./Thorpe, R./Jackson, P.R. (2015): Management & Business Research, 5th edition, Los Angeles: SAGE. • Hermarij, J. (2016): The Better Practices of Project Management. Based on the IPMA Competences, 4th edition, Amersfoort: Van Haren Publishing. • Minto, B. (2009): The Pyramid Principle, Logic in Writing and Thinking. Harlow: Prentice Hall Education. • Müller, S./Roth A. (2015): Academic Writing. Guidelines for a Term Paper, Bachelor and Master Thesis. Nürnberg: self-publishing.

ECS2 - Economic Sciences 2

Module profile				
Module ID	ECS2			
Module name	Economic Sciences 2			
Exam number according to degree programme	BWW -	IBE 3822600	BLO -	IBL 3923600
Duration	1 semester			
Frequency	Winter and summer semester (WS in IBL; SS in IBE)			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attendance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schulz			
Lecturer(s)	Prof. Dr. Farmanara; Prof. Dr. Schulz			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 2nd semester Core module -	- - - -	IBL 3rd semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequisites for the participation in the **module**	Successful passing of the module ECSB.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90-120 minutes The concrete length of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: **Part: Customer oriented management/marketing** • Identify basic marketing terms and relevant methods of marketing and know their historical origins (beginnings of marketing until modern) and explain the differences between existing, dominant marketing paradigms. • Differentiate basic terms, relationships and instruments to identify and develop dynamics with relevance to markets (e.g. segmentation). • Define the basics of strategic marketing and to evaluate the strategic prerequisites of a company in relation to its success. • Differentiate and apply methods of market research. **Part: Organization, strategy, and company** • Know the most important instruments of strategic analysis and can apply them to straightforward business situations. • Explain the most important organizational structures, their related characteristics, and how they affect organizational behavior. • Identify and understand specifics of corporate cultures. • Recognize and classify leader behavior, leadership styles, as well as underlying attitudes, values, and behavioral patterns.
Contents	**Part: Customer oriented management/marketing** • The role of marketing in customer-oriented corporate leadership • Normative marketing (e.g. vision, mission, goals) • Strategic marketing (e.g. SWOT-analysis, positioning, strategies) • Operative marketing (e.g. marketing instruments, customer orientation, organisation) • Marketing in flux (e.g. importance of paradigms) **Part: Organization, strategy, and company** • Instruments of strategic analysis (industry analysis, external environment, competence analysis and development, business models) and business strategies (differentiation, cost leadership, nishes) • Organizational structure (forms, contingencies) • Organizational design and organizational culture • Roles, and traits of managers/leaders • Norms, motives, attitudes, and values as determinants of (leader) behavior • Leadership: styles, contingency theories, leader-member exchange theory, power

Literature	• Grant, R.M. (2013): Contemporary Strategy Analysis, 8th edition, Hoboken, NJ: Wiley. • Johns, G./Saks, A. (2011): Organizational Behavior. Understanding and Managing Life at Work, 8th edition, London: Pearson. • Jones, G.R. (2013): Organizational Theory, Design and Change, 7th edition, London: Pearson. • Kotler, P./Armstrong, G./Harris, L.C./Piercy, N. (2013): Principles of Marketing, 6th edition, Harlow: Pearson Education Limited. • Kotler, P./Keller, K.L. (2012): Marketing Management 14th edition, Pearson Education Limited. • Kotler, P./Keller, K.L./Opresnik (2015): Marketing Management 14 - Konzepte, Instrumente, Unternehmensfallstudien, Harlow: Pearson Education Limited. • Malhotra, N.K./Birks, D.F./Wills, P. (2012): Marketing Research - An Applied Approach, 6th edition, Harlow: Pearson Education Limited. • Robbins, S.P./Coulter, M. (2016): Management, 13th edition, London: Pearson.

Second Part of Studies, Programme Semester 4 to 7

SEML - Seminar in Logistics

Module profile				
Module ID	SEML			
Module name	Seminar in Logistics			
Exam number according to degree programme	BWW -	IBE -	BLO 3394100	IBL 3924100
Duration	1 semester			
Frequency	Summer semester			
Credit hours (SWS)	2			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 30	Amount of Self-study time 120	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schmidt			
Lecturer(s)	Prof. Dr. Bremer; Prof. Dr. Gampl; Prof. Dr. Machholz; Prof. Dr. Schmidt; Prof. Dr. Schwindl; u.a.			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 4th semester Core module -	IBL 4th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	Seminar paper/research project
Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice); • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Write a methodology based scientific report about a logistics related topic. • Distinguish between scientific and non-scientific sources. • List databases that can be used for searching for scientific resources, research on their own and evaluate the quality and suitability of the literature found. • Cite correctly according to a given standard. • Describe the requirements for a well-structured table of contents and set up a table of contents for their topic. • Write texts in an appropriate, scientific style. • Present their results.
Contents	• Finding an appropriate research question • Literature Research; gathering and analysing empirical data • Scientific citing • Design and continuous adapting of the Table of contents • Writing and reflecting a scientific report
Literature	• Easterby-Smith, M./Thorpe, R./Jackson, P. R. (2012): Management Research, 4th edition, London: SAGE Publications. • Minto, B. (2009): The Pyramid Principle. Logic in Writing and Thinking. 4th ed., Harlow: Prentice Hall. • Müller, S./Roth, A. (2015): Academic Writing: Guidelines for a Term Paper, Bachelor and Master Thesis. Nürnberg: self-publishing. • Balzert, H./Schäfer, C./Schröder, M./Kern, U. (2010): Wissenschaftliches Arbeiten, Herdecke: W3l. • Prexl, L. (2015): Mit digitalen Quellen arbeiten. Richtig zitieren aus Datenbanken, E-Books, YouTube und Co. UTB-Band-Nr. 4420, Paderborn: Ferdinand Schöningh.

MFST - Material Flow Systems/Technical Logistics

Module profile				
Module ID	MFST			
Module name	Material Flow Systems/Technical Logistics			
Exam number according to degree programme	BWW -	IBE -	BLO 3384200	IBL 3914200
Duration	1 semester			
Frequency	Summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (= seminar-like lecture), Ü (= exercise course)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schwindl			
Lecturer(s)	Prof. Dr. Schwindl; Ms. Ullerich			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 4th semester Core module -	IBL 4th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90 minutes
Language of examination	• BLO: Deutsch oder Englisch nach Wahl des Studierenden (Ger-man or English - student´s choice) • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Apply the theoretical basics of queuing and technical systems in the operating environment of intralogistics. • Analyse, transform and apply these basic concepts to the planning and dimensioning of intralogistics functional elements such as conveyor belts etc. and use, plan and improve adequate logistic processes in warehouse models and concepts.
Contents	• Random Processes and Stochastic Flows • Limit Performances of Stations and Performance Laws • Waiting Queues and Queueing Laws • Reliability, Availability, Capability Analysis • Storage Requirements, Storeplaces and Storage Types, Storage Technique and Strategies, Place Demand and Filling Degree, Storeplace Optimization, Storage Planning and Dimensioning • Commissioning Requirements, Methods, Technique, Planning of Commissioning Systems • Transport Systems, Conveyor Systems, Transport Control • Design of Logistic Halls, Requirements and Restrictions, Objectives and technical design Parameters, Hall Design Principles • Principles of Value Stream Mapping
Literature	• Gudehus, T./Kotzab, H. (2009): Comprehensive Logistics, Berlin: Springer. • Curry, G. L./Feldman, R.M. (2009): Manufacturing Systems Modeling and Analysis, Berlin: Springer.

ERLA - ERP Logistics Applications

Module profile				
Module ID	ERLA			
Module name	ERP Logistics Applications			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL 3914300
Duration	1 semester			
Frequency	Summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (= tuition in seminars) (2 SWS); Ü (= tutorial) (2 SWS)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Hennermann			
Lecturer(s)	Prof. Dr. Hennermann			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	- - - -	IBL 4th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Know the fields of application and market players of ERP-systems in a national and international context. • Illustrate the functional range of ERP-systems and can differentiate them from E-business systems and industry solutions. • Name core business processes in logistics divisions and understand the performing of these business processes in ERP-systems. • Know different possibilities of analysis. The students will broaden their practical knowledge by practicing with an ERP-system.
Contents	1. Procurement (MM-PUR) • Master Data Supplier and Material • Purchasing stock material • Consignment order • Return delivery and returns order 2. Inventory management (MM-INV) • Goods issue, withdrawl • Re-storage, rebooking • Stock transport order • Inventory 3. Production planning and scheduling (PP) • Master data (bill of materials, work center, routing) • Sales and operations planning • Demand planning • Production order processing • Order network • Subcontracting 4. Sales and distribution (SD) • Master data: customers and Conditions • Sale from warehouse • Sale with make to order • Returns and credit processing • Consignment fill-up 5. Quality management (QM) • QM in purchasing • QM in production • QM in sales and services
Literature	Bhattacharjee D./Desai, C./Narasimhamurti, V. (2019): Logistics with SAP S/4HANA, Bonn: Rheinwerk.

SCMG - Supply Chain Management

Module profile				
Module ID	SCMG			
Module name	Supply Chain Management			
Exam number according to degree programme	BWW -	IBE 3815450	BLO 3334400	IBL 3914400
Duration	1 semester			
Frequency	Summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (= seminar-like lecture), S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Gampl			
Lecturer(s)	Prof. Dr. Gampl; Prof. Dr. Machholz			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 4th semester/ 5th semester Core elective module Compulsory for Purchasing	BLO 4th semester Core module -	IBL 4th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	BLO and IBL: Successful passing of the modules OPMG, TMFO, BPLO.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination)
Examination - length/format	90 minutes
Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice) • IBE, IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Explain which activities are summarised by the term Supply Chain Management (SCM), how SCM has developed over the last decades and list recent challenges of SCM. • Explain different SCM strategies depending on product, industry and environment and apply these strategies to new cases. • State what cooperation models between suppliers and customers can exist also with focus on 3PLs (Third Party Logistics Providers). • Analyse and interpret recent developments on the 3PL market. • Explain why reaching high supply chain visibility is so difficult and list features of SCM software. • Explain measures to increase Supply Chain Security and give reasons why Risk Management for the whole Supply Chain is difficult to reach.
Contents	• Definitions of SCM and development of SCM over time • Supply Chain strategies according to product, industry and evironment (e.g. postponement, responsiveness, Triple A) • Concepts for collaboration within the supply chain linking together suppliers, manufacturers, logistic service providers, and customers • Information flow in Supply Chains with emphasis on supply chain visibility • Supply Chain Security and Risk Management • Culture and Human Resource Management as important aspects of successful Supply Chain Management
Literature	• Simichi Levi, D./Kaminsky, P./Simichi Levi, E. (2009): Designing and Managing the Supply Chain: Concepts, Strategies and Case Studies, 3rd ed. Boston: Irwin/McGraw-Hill. • Chopra, S./Meindl, P. (2015): Supply Chain Management, 6th edition (Global), Harlow: Pearson Education. • Fisher, M. L.: What is the Right Supply Chain for your Product? Harvard Business Review, March-April 1997, p. 1-10. • Stadtler, H./Kilger, C./Mayr, H. (2015): Supply Chain Management and Advanced Planning, 5th edition, Berlin: Springer Verlag. • Werner, H. (2013): Supply Chain Management - Grundlagen, Strategien, Instrumente und Controlling, 5. Auflage, Gabler Verlag.

PROA - Project in Industry A

Module profile				
Module ID	PROA			
Module name	Project in Industry A			
Exam number according to degree programme	BWW -	IBE -	BLO 3384500	IBL 3914500
Duration	1 semester			
Frequency	Summer semester			
Credit hours (SWS)	2			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 30	Amount of Self-study time 120	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schmidt			
Lecturer(s)	Prof. Dr. Bremer; Prof. Dr. Gampl; Prof. Dr. Machholz; Prof. Dr. Schmidt; Prof. Dr. Schwindl			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 4th semester Core module -	IBL 4th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the modules OPMG, TMFO and BPLO.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	**One** of the following formats: • seminar paper/research project • portfolio assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".

Language of examination	• BLO: Deutsch oder Englisch nach Wahl des Studierenden (German or English - student´s choice); • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Design a project proposal and derive a project order in the context of practical logistics problems. • Develop - based on a practical logistics case - supported by the project coach, a framework for the problem identification, the project analysis and the solution path. • Apply therefore concepts, methods and tools of project management in a project team with other students. • Present and communicate all findings and results in a professional manner to the client.
Contents	The project groups meet each other 1-3 times a week and discuss in a systematic way project specific issues related to the project goals, team building/management and customer relations. Obligatory deliverables of the project groups are: • the project order (signed by the customer), • the structural project plan and project schedule, • an intermediate and a final presentation in front of the industrial client, • a final project report describing the project results in brief words, • a short final (poster-) presentation in front of all other student groups which can be used from the university for marketing purposes.
Literature	• Aken van, J./Berends, H./Bij van der, H. (2012): Problem solving in organizations. A methodological handbook for business and management students. Cambridge: Cambridge University Press. • Campell, C. (2007): The One-Page- Project Manager, Communicate and manage any project with a single sheet of paper. Hoboken: Wiley. • Easterby-Smith, M./Thorpe, R./Jackson, P.R. (2015): Management & Business Research, 5th ed. Los Angeles: SAGE. • Hermarij, J. (2016): The Better Practices of Project Management. Based on the IPMA Competences, 4th ed. Amersfoort: Van Haren Publishing. • Minto, B. (2009): The Pyramid Principle, Logic in Writing and Thinking. Harlow: Prentice Hall Education.

TAPL - Technical Applications for Logistics

Module profile				
Module ID	TAPL			
Module name	Technical Applications for Logistics			
Exam number according to degree programme	BWW -	IBE -	BLO 3384600	IBL 3914600
Duration	1 semester			
Frequency	Summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (= seminar-like lecture) (4 SWS)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Bremer			
Lecturer(s)	Prof. Dr. Bremer			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 4th semester Core module -	IBL 4th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Fundamental knowledge in mechanical and electrical engineering as well as in information technology. Sound understanding of logistics business processes.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice) • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Use logistics identifiers to provide data-driven services for the supply chain. • Represent logistics identifiers in machine-readable formats. • Describe the functionality of and select suitable technical systems for automatic identification. • Describe principles of navigation and positioning for automated equipment in logistics processes. • Describe basic mechanisms of event detection and handling in automated material flow systems. • Describe the integration of automation technology into logistics software application systems.
Contents	This course provides an overview of technology basics and their implementations in technical applications supporting logistics processes: • GS1 identifiers in logistics (GLN, GTIN, SSCC, GRAI, GSIN, GINC) • Data-driven services for the supply chain: Supply chain visibility, master-data synchronisation • Machine-readable formats of logistics identifiers: Barcode symbologies and barcode representation of logistics identifiers; Electronic Product Code • Optical automatic identification: Barcode printing and reading; Optical Character Recognition • Radio-Frequency Identification (RFID): Technology basics of RFID, energy supply and data transfer, frequency bands, challenges in RFID applications • Positioning and navigation: Dead reckoning and bearing • Navigating AGV's: Guide wire, guide tape, transponder grid, laser, natural features, GPS, SLAM • Event detection and handling in material flow systems: Sensors, Programmable Logic Controller (PLC), actuators; Applications in automated material flow systems • Integration of automation technology into WMS
Literature	• Finkenzeller, K. (2010): RFID Handbook. Fundamentals and Applications in Contactless Smart Cards, Radio Frequency Identification and Near-Field Communication, 3rd ed., Chichester: Wiley. • ten Hompel, M./Schmidt, T. (2007): Warehouse Management. Automation and Organisation of Warehouse and Order Picking Systems, Berlin: Springer.

ELMA/B/C - Core Elective Module A/B/C

Module profile				
Module ID	ELMA/B/C			
Module name	Core Elective Module A/B/C			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL Depends on the chosen modules.
Duration	1 semester each			
Frequency	Winter and summer semester Some courses are only offered once a year. Please find further information in the respective ELMA/B/C course description (see appendix).			
Credit hours (SWS)	4 each			
ECTS-Credits (CP)	5 each			
Workload Respective hours	Total workload for each module 150	Amount of Attendance time for each module 60	Amount of Self-study time for each module 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Programme Director			
Lecturer(s)	Depends on the chosen course. Please find further information in the respective course description (see appendix).			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	- - - -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequisites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	Depends on the chosen ELMA/B/C. Please find further information in the respective course description (see appendix).
Examination - length/format	Depends on the chosen ELMA/B/C. Please find further information in the respective course description (see appendix).
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Explain specific subjects out of the field of Logistics. • Know about the specific course the basic terms, relevant market players and their technical and managerial problems. • Apply that knowledge on logistics problems from practice.
Contents	The Core Electives ELMA/B/C offer courses in specific subjects of the field of Logistics. The available ELMA/B/C courses change regularly. Therefore, the actually offered courses will be announced each semester.
Literature	Depends on the chosen ELMA/B/C. Please find further information in the respective course description (see appendix).

PROB - Project in Industry B

Module profile				
Module ID	PROB			
Module name	Project in Industry B			
Exam number according to degree programme	BWW -	IBE -	BLO 3385200	IBL 3915200
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	2			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 30	Amount of Self-study time 120	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schmidt			
Lecturer(s)	Prof. Dr. Bremer; Prof. Dr. Gampl; Prof. Dr. Machholz; Prof. Dr. Schmidt; Prof. Dr. Schwindl			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 5th semester Core module -	IBL 5th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the modules OPMG, TMFO and BPLO.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	**One** of the following formats: • seminar paper/research project • portfolio assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".

Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice); • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Design a project proposal and derive a project order in the context of practical logistics problems. • Develop - based on a practical logistics case - supported by the project coach, a framework for the problem identification, the project analysis and the solution path. • Apply therefore concepts, methods and tools of project management in a project team with other students. • Present and communicate all findings and results in a professional manner to the client.
Contents	The project groups meet each other 1-3 times a week and discuss in a systematic way project specific issues related to the project goals, team building/management and customer relations. Obligatory deliverables of the project groups are: • the project order (signed by the customer), • the structural project plan and project schedule, • an intermediate and a final presentation in front of the industrial client, • a final project report describing the project results in brief words, • a short final (poster-) presentation in front of all other student groups which can be used from the university for marketing purposes.
Literature	• Aken van, J./Berends, H./Bij van der, H. (2012): Problem solving in organizations. A methodological handbook for business and management students. Cambridge: Cambridge University Press. • Campell, C. (2007): The One-Page- Project Manager, Communicate and manage any project with a single sheet of pa- per. Hoboken: Wiley. • Easterby-Smith, M./Thorpe, R./Jackson, P.R. (2015): Management & Business Research, 5th ed. Los Angeles: SAGE. • Hermarij, J. (2016): The Better Practices of Project Management. Based on the IPMA Competences, 4th ed. Amersfoort: Van Haren Publishing. • Minto, B. (2009): The Pyramid Principle, Logic in Writing and Thinking. Harlow: Prentice Hall Education.

INLO - International Logistics

Module profile				
Module ID	INLO			
Module name	International Logistics			
Exam number according to degree programme	BWW -	IBE -	BLO 3385300	IBL 3915300
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture), S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schmidt			
Lecturer(s)	Prof. Dr. Gampl; Prof. Dr. Schmidt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 5th semester Core module -	IBL 5th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the modules TMFO and SCMG.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course "Studien- und Prüfungsangelegenheiten/study and exam-ination matters".
Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice) • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Explain the main drivers of global trade and their impact on transport and logistics activities. • Identify possible service areas and tasks for international logistics service providers in different countries. • Explain the managerial challenges and examples of solutions in international land transportation resp. the operation of intermodal SCs between rail, road and sea. • Illustrate the latest trends in maritime and container shipping and discuss the micro-economics of container shipping influencing the market competition. • Explain the international air-cargo-chain with its players, trends, organisations, business models and competition. • Describe the main challenges in international supply chain management and undermine the arguments by applying game theory approaches. • Illustrate and analyse product flows in existing international supply chains graphically. • Explain what E-Commerce is and describe important developments in the last years and respective reasons. • Describe what green logistics and sustainability is and which standards can be used to “measure” the performance.
Contents	• Global trade and its impact on transport and logistics • World Logistics Performance Index and possible service areas of international logistics service providers • Managerial Challenges in international land transportation • International Maritime and Container Shipping • Characterization of the air cargo industry and and air freight shipping • Challenges of international Supply Chain Management • Analysis of product flows in international supply chains • E-Commerce • Green Logistics and Sustainability
Literature	• Branch, A. (2009): Global Supply Chain Management and International Logistics. Oxon: Routledge. • Branch, A. (2007): Elements of Shipping. 8th ed. Oxon: Routledge. • Coyle J./Novack, R./Gibson, B. (2015): Transportation. A Global Supply Chain Perspective, 8th ed. Boston: Cengage Learning. • Hill, C. W. L (2013): International Business - Competing in the Global Marketplace. 9th ed., New York: McGraw-Hill. (p. 518f: Coca Cola case study). • Manners-Bell, J. (2017): Introduction to Global Logistics. Delivering the Goods. 2nd ed. London: Kogan Page. • Rodrigue, J.P./Comtois, C./Slack, B. (2006): The Geography of Transport Systems, 2nd ed., Oxon: Routledge. • Wensveen, J. G. (2011): Air Transportation. A Management Perspective. 7th ed., Farnham: Ashgate.

SAPC - SCM- and APS-Systems, Customizing

Module profile				
Module ID	SAPC			
Module name	SCM- and APS-Systems, Customizing			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL 3915400
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (= seminar-like lecture), S (= seminar)			
Language of instruction	English			

Organisation	
Responsible	Prof. Dr. Hennermann
Lecturer(s)	Prof. Dr. Hennermann
Applicability; Semester according to SER; Type of module; If applicable specialisation	BLO 5 Core module -
Particular conditions for the participation in the **module** according to the SER	-
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module ERLA.

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - duration	90 minutes The concrete length of the examination will be determined in the curri-culum and published at the beginning of each semester in the e-Lear-ning course “Studien- und Prüfungsangelegenheiten/study and exam-ination matters”.
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Know the possibilities for process handling in a typical SCM Solution. • Customize and adapt the system to the company-specific organizational structures, master data and business processes. Exercises will broaden the students' practical knowledge.
Contents	• **SCM-/APS-Systems:** a) Supply Chain Cockpit b) Capable To Promise c) Integrated PPDS Planning d) SNP Planning e) Bottom-Up Heuristic in the Planning Board • **Customizing:** a) Customizing-projects b) Production order • Order type • Number range • Termination • Availability check • Printing • Feedback • Status management • Purchasing: Automatic account locating c) Quality management • Nature of message • Partner determination • Surface design d) Sales: Automatic account locating
Literature	• Balla, J./Layer, F. (2010): Production Planning with SAP APO, Learn how to implement, customize, and use SAP APO-PP/DS, 2nd ed. Bonn: Rheinwerk Verlag. • Pradhan, S. (2012): Demand and Supply Planning with SAP APO. Bonn: Rheinwerk Verlag.

LSER - Logistics Services

Module profile				
Module ID	LSER			
Module name	Logistics Services			
Exam number according to degree programme	BWW -	IBE -	BLO 3385500	IBL 3915500
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (=seminar-like lecture), S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schmidt			
Lecturer(s)	Prof. Dr. Schmidt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	BLO 5th semester Core module -	IBL 5th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the modules TMFO and SCMG.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO
Examination - length/format	90 minutes
Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice) • IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Distinguish between the characteristics of physical products and a logistics services and deduct the consequences for managerial issues. • Explain the elementary cost-service trade-off in logistics networks and give examples for it. • Apply the principles of successful logistics network design for industrial and retail distribution networks and for networks of logistics service providers based on practical examples. • Illustrate the special managerial challenges of logistics service providers in planning and operating logistics networks with examples out of practice. • Illustrate and explain the different kinds and specific aspects of important supporting business processes for logistics service providers.
Contents	Based on an elementary discussion about the specific characteristics of services in general and especially logistics services the event covers the following issues: • The cost-service trade-off in logistics services and customer requirements as the basis for logistics network design • Network related transportation models, geographical typologies of logistics networks and principles of successful logistics network design • Characteristics of logistics service networks in industry; alternatives in distribution channel design • Characteristics of logistics service networks in retail; warehouse concepts, cross-docking concepts, omnichannel design • Types and specialities of networks of logistics service providers • Specific managerial challenges in logistics services regarding sales and marketing, management of HR
Literature	• Jonsson, P. (2008): Logistics and Supply Chain Management, New York: McGraw Hill. • Sunil, C./Meindl. P. (2013): Supply Chain Management. Strategy, Planning, and Operation, 5th ed., Boston: Pearson. • Wilson, A. et al. (2012): Services Marketing: Integrating Customer Focus Across the Firm, 2nd ed., New York: McGraw Hill.

STPU - Strategic Purchasing

Module profile				
Module ID	STPU			
Module name	Strategic Purchasing			
Exam number according to degree programme	BWW -	IBE 3815350	BLO 3335500	IBL 3915600
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	SU (= seminar-like lecture), S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Machholz			
Lecturer(s)	Prof. Dr. Machholz			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 4th semester/ 5th semester Core elective module Compulsory for Purchasing	BLO 5th semester Core module -	IBL 5th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	BLO and IBL: Successful passing of the modules OPMG, BPLO.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination)
Examination - length/format	90 minutes
Language of examination	• BLO: Deutsch oder Englisch nach Wahl der/des Studierenden (German or English - student´s choice) • IBE, IBL: English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Describe, interpret and determine the value-driving role of today´s procurement. • Understand the traditional roles, processes and organizational forms of procurement. • Put into a position to analyse, design and improve current purchasing portfolios, processes and organizations. • Apply state-of-the-art know-how and technologies (e.g. AI, RPA, bots,…). • Increase purchasing`s business, social and environmental impact.
Contents	• Introduction & overview, business impact & recent development of the purchasing function within the last decades • Kraljic`s pocurement matrix and tools vs. Puchasing Chessboard, comparison of similarities & differences of these 2 portfolio approaches • Procurement processes and organization models, SCOR Mode • Performance Measurements & relevant KPIs for purchasing • Contracts (specifics, critical factors), negotiations and communication models (von Thun, transaction analysis, DISG, NLP, Harvard concept) • Global sourcing, risks & benefits, cultural differences, ethical & environmental aspects • Supplier selection, assessment, and strategic development incl. many different industry examples • Category management • Non traditional categories • Risk management • Green sourcing, sustainability, consumption of ressources
Literature	• Levi, D./Kaminsky, P./Levi, E. (2008): Designing & Managing the Supply Chain , 3rd edition, New York : McGraw Hill. • Hug, W./Weber, J. (2011): Wertetreiber Einkauf, Weinheim: Wiley. • Kerkhoff, G. (2010): Einkaufsagenda 2020; Weinheim: Wiley VCH. • Arnold, U. (1997): Beschaffungsmanagement, Stuttgart: Schäffer-Poeschel. • Mentzer, J. T. (2009): Supply Chain Management, New Delhi : Response Books.

INTM - Internship Module

The Internship Module consists of

a) a continuous, supervised **internship** lasting 20, but no more than 26 weeks and is
b) accompanied by the seminar "**Preparation and Reflection of Internship**". (see § 6 SPO B IBL - engl.)

The internship Module is deemed to be successfully completed if

a) evidence of the activities during the internship and its duration in relation to a full-time activity is provided through the employer and
b) a report on the activities during the internship, signed by the employer, is available and has been approved by the supervisor of the faculty. (see § 11 (7) APO)

INTS - Internship

Module profile				
Module ID	INTS			
Module name	Internship			
Exam number according to degree programme	BWW -	IBE 3826100	BLO -	IBL 3926200
Duration	1 semester			
Frequency	Winter and summer semester			
Teaching units per week (SWS)	0			
ECTS-Credits (CP)	28			
Workload Respective hours	Total workload 840	Amount of Attend-ance time 0	Amount of Self-study time 840	
Teaching format	Pr (= practical)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Farmanara (IBE); Prof. Dr. Gampl (IBL)			
Lecturer(s)	Prof. Dr. Farmanara; Prof. Dr. Gampl			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 6th semester Core module -	- - - -	IBL 6th semester Core module -
Particular conditions for the participation in the **module** according to the SER	• Acquisition of all 90 CPs of the first three regular semesters (§ 6 (2) SER IBE and § 6 (2) SER IBL). • Submission of an internship contract to students' office prior to starting the internship (§11 (5) APO).			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	Acquisition of all 90 CPs of the first three regular semesters (§ 6 (2) SER IBE and § 6 (2) SER IBL).
Examination - type	-
Examination - length/format	-
Language of examination	English
Condition for the award of credit points	Submission of certificate of employment (issued by employer at which the internship has been conducted).

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Analyse, understand, and interpret real business processes and structures hands-on, in particular related constraints and opportunities. • Deploy the soft skills needed in real business environments (e.g. abilities to communicate, to convince others, to manage conflicts, and to work within a team) confidently, appropriately, professionally, and in a goal-oriented manner. • Develop systematically solutions for business challenges. • Be fully employable on the graduate job market.
Contents	• Immersion in business practice • Practical application and consolidation of knowledge, skills, and methods acquired in the degree course • Autonomous execution of planning, organization, and control tasks in organisations • Generation of business solutions in a specialisation area of the degree course
Literature	• Will be provided by company (internal documentation). • Standard textbooks of the relevant functional areas.

PRIN - Preparation and Reflection of Internship

Module profile				
Module ID	PRIN			
Module name	Preparation and Reflection of Internship			
Exam number according to degree programme	BWW -	IBE 3826110	BLO -	IBL 3926100
Duration	1 semester			
Frequency	Winter- and summer semester			
Teaching units per week (SWS)	2			
ECTS-Credits (CP)	2			
Workload Respective hours	Total workload 60	Amount of Attend-ance time 30	Amount of Self-study time 30	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Farmanara (IBE); Prof. Dr. Gampl (IBL)			
Lecturer(s)	Prof. Dr. Farmanara; Prof. Dr. Gampl			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 6th semester Core module -	- - - -	IBL 6th semester Core module -
Particular conditions for the participation in the **module** according to the SER	• Acquisition of all 90 CPs of the first three regular semesters (§ 6 (2) SER IBE and § 6 (2) SER IBL). • INTS, i.e. the internship must already have been conducted (at least completed to a large degree). • Submission of the internship report.			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	Acquisition of all 90 CPs of the first three regular semesters (§ 6 (2) SER IBE and § 6 (2) SER IBL).
Examination - type	soP m. E./o. E. (= other examined assignment passed success-fully/failed) according to § 27 APO
Examination - length/format	Multimedia Presentation resp. documentation according to § 6 (3) S. 3 SPO IBE bzw. § 6 (3) S.3 SPO IBL
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Reflect on patterns of personal behaviour and success criteria in the organizational environment. • Assess critically and constructively goals, structures, processes, and culture of organizations. • Evaluate critically and constructively their own professional behavior as well as that of colleagues and supervisors.
Contents	• Interactive presentation of contents and experiences during the internship as well as elaborations on employers, industries, and functional areas • Discussions of experiences made during the internships • Comparison of experiences with personal expectations • Overview of a variety of job-relevant information
Literature	Minto, B. (2010): The Pyramid Principle, 3rd ed., Upper Saddle River, NJ: Prentice Hall.

GENE - General Elective

Module profile				
Module ID	GENE			
Module name	General Elective			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL -
Duration	1 semester			
Frequency	Winter and summer semester			
Credit hours (SWS)	4 Either two general electives (*Allgemeinwissenschaftliche Wahlpflicht-fächer*, AWPF) (2 x 2 teaching units/week) or one AWPF (1 x 4 teaching units/week) from the AWPF-catalogue of the Faculty of Applied Natural Sciences and Humanities (FANG).			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attendance time 60	Amount of Self-study time 90	
Teaching format	SU (= seminar-like lecture); S (= seminar); Ü (= tutorial)			
Language of instruction	The respective language(s) will be laid down and published by the Faculty of Applied Natural Sciences and Humanities.			

Organisation				
Responsible	Dean of the Faculty of Applied Natural Sciences and Humanities			
Lecturer(s)	Lecturers of the Faculty of Applied Natural Sciences and Humanities and/or lecturers instructed by the Faculty.			
Applicability;	The module serves to develop interdisciplinary competences ("*studium generale*"); it is not closely related to any other module of the degree programme. It can be applied to all bachelor's programmes without blocking note. At the Faculty of Business and Engineering the module has to be taken in the following programmes:			
 Semester according to SER; Type of module; If applicable specialisation	 - - -	IBE 7th semester General elective module -	- - - -	IBL 7th semester General elective module -
Particular conditions for the participation in the **module** according to the SER	Usually none; exceptions are defined and published by the Faculty of Applied Natural Sciences and Humanities.			
Recommended prerequisites for the participation in the **module**	Usually none; exceptions are defined and published by the Faculty of Applied Natural Sciences and Humanities.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	Every AWPF is completed by an examination; it's type will be laid down and published by the Faculty of Applied Natural Sciences and Humanities.
Examination - length/format	The duration of the examination(s) will be laid down and published by the Faculty of Applied Natural Sciences and Humanities in case of a written examination.
Language of examination	The language of the examination depends on the chosen AWPF. It will be laid down and published by the Faculty of Applied Natural Sciences and Humanities.
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	Subject-specific learning outcomes depend in each case on the chosen AWPF. Students • Will additionally acquire knowledge and skills outside their discipline that, however, may be important for their intended careers. as for example specialist knowledge of foreign languages, or knowledge in the fields of natural sciences and social sciences. • Will analyse a variety of problems. • Connect their subject-specific knowledge to that of other disciplines and thus get an interdisciplinary perspective. • transfer acquired knowledge to current training situation • Will have broadened their key competences and, if applicable, foreign language skills which both contribute to their character formation also in terms of interculturality. • Are aware of their personal, social, and ethical responsibility.
Contents	FANG offers AWPFs from the areas of • Languages • Cultural Sciences • Natural Sciences and Technology • Politics, Law, Economics • Pedagogy, Psychology, Social Sciences • Soft Skills • Creativity and Art Contents that are already included or closely related to other module contents of the degree programme are excluded from the FANG catalogue. In the FANG catalogue, the respective classes are marked by a blocking note. The content of each AWPF is published on FANG's website.
Literature	Depends in each case on the chosen AWPFs.

BCTH - Bachelorthesis

Module profile				
Modul-ID	BCTH			
Module name	Bachelorthesis			
Exam number according to degree programme	BWW -	IBE 3817400	BLO -	IBL 3917400
Duration	1 semester			
Frequency	Winter and summer semester			
Credit hours (SWS)	0			
ECTS-Credits (CP)	10			
Workload Respective hours	Total workload 300	Amount of Attend-ance time 0	Amount of Self-study time 300	
Teaching format	-			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schmidt			
Lecturer(s)	Depends on the chosen topic.			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 7th semester Core module -	- - - -	IBL 7th semester Core module -
Particular conditions for the participation in the **module** according to the SER	According to § 11 SER IBE and § 11 SER IBL: a) Successful completion of the supervised internship and the prep-aration and reflection of the internship b) At least 150 CPs			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module PMSW.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	Bachelor´s Thesis
Examination - length/format	-
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Independently work on a topic agreed between the supervisor and the candidate within the given timeframe according to scientific criteria. • Work on a topic agreed between the supervisor and the candidate within the given timeframe according to scientific criteria. • Understand the topic and derive the research question from it. • Select suitable scientific methods and procedures and use them to find suitable solutions. • Are able to interpret, evaluate and prepare the results in a suitable way and to communicate them according to the needs.
Contents	Aims and contents of the bachelor thesis are either chosen by the student or proposed by the lecturer. These can be concrete practical topics or scientific topics in correlation with practical application. The topic must relate to “Business and Engineering” or “Logistics” and/or must relate to general or specific present questions and topics.
Literature	• Easterby-Smith M./Thorpe R./Jackson P./Jaspersen L. (2018): Management and Business Research, 6th Edition, Sage Publishing, Los Angeles. • Minto, B. (2009): The Pyramid Principle, Logic in Writing and Thinking, 3rd revised ed., Prentice Hall, Upper Saddle. • Balzert, H./Schröder, M./Schäfer, Chr. (2011): Wissenschaftliches Arbeiten - Ethik, Inhalt & Form wiss. Arbeiten, Handwerkszeug, Quellen, Projektmanagement, Präsentationen, 2. Aufl., Herdecke, W3L Verlag.

COC1 - Core Competences 1

Module profile				
Module ID	COC1			
Module name	Core Competences 1			
Exam number according to degree programme	BWW -	IBE 3827200	BLO -	IBL 3917500
Duration	1 semester			
Frequency	Winter and summer semester			
Credit hours (SWS)	2			
ECTS-Credits (CP)	3			
Workload Respective hours	Total workload 90	Amount of Attend-ance time 30	Amount of Self-study time 60	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Stadelmann			
Lecturer(s)	Prof. Dr. Stadelmann; N.N.			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 7th semester Core module -	- - - -	IBL 7th semester Core module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module PMSW.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	**One** of the following formats: • seminar paper/research project • multimedia presentation • written assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Exhibit an accurate sense of self, make use of feedback and know personal beliefs and values. • Consider the perspective of others. • Create and apply effective communication strategies and lead effective conversations. • Comprehend roles, interactions and processes in a team and strive for common solutions.
Contents	• Elements of self-management, including individual thinking style analysis according to the Herrmann Brain Dominance Instrument (HBDI) • Basic characteristics of communication • Communication models and techniques (comprehensibility, active listening, question technique) • Giving and receiving feedback • Preparing and conducting conversations • Success factors for teamwork
Literature	• Cashman, K. (2008): Leadership from the inside out. Becoming a leader for life. 2nd edition, San Francisco: Berrett-Koehler. • De Janasz, S. C./Dowd, K. O./Schneider, B. Z. (2012): Interpersonal skills in organizations. 4th edition, Boston: McGraw-Hill. • Herrmann, N./Hermann,-Nehdi, A. (2015): The Whole Brain Business Book, 2nd edition, New York: McGraw Hill Book. • Solomon, D. H. /Theiss, J. (2013): Interpersonal Communication. Putting theory into practice, New York: Routledge.

COC2 - Core Competences 2

Module profile				
Module ID	COC2			
Module name	Core Competences 2			
Exam number according to degree programme	BWW -	IBE 3827300	BLO -	IBL 3917600
Duration	1 semester			
Frequency	Winter and summer semester			
Credit hours (SWS)	2			
ECTS-Credits (CP)	2			
Workload Respective hours	Total workload 60	Amount of Attend-ance time 30	Amount of Self-study time 30	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	N.N.			
Lecturer(s)	Ms. Körner; Ms. Shendrick; Prof. Dr. Stadelmann; Mr. Stüwe			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 7th semester Elective mod-ule -	- - -	IBL 7th semester Elective mod-ule -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module COC1.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	**One** of the following formats: • seminar paper/research project • multimedia presentation • written assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	After having attended the module COC1 (Core Competences 1) students have the possibility to choose a course in order to specialise in a certain field of personal core competences. After successful completion of a module COC2 (Core Competences 2), the student should be able to • Reproduce content from the respective field • Derive appropriate options for his/her own behaviour • Make a reflected decision for a specific behaviour and implement this in practical situations.
Contents	Depends on the chosen course. Please find further information in the respective COC2 module description (see appendix).
Literature	Depends on the chosen course. Please find further information in the respective COC2 module description (see appendix).

Appendix 1: Catalogue of Core Elective Modules ELMA/B/C

By completing the Core Elective Modules the students enlarge their know-how and skills by specific subjects out of the field of Logistics and / or Business Engineering. Overall three of the following courses must be completed. As the courses on offer are changing regularly, the actually available courses will be published every semester.

Module ID	Module name	Language of instruction
ADPU	Advanced Purchasing	English
COIN	Connected Industry	English
FPER	Factory Planning and Ergonomics	English
INEN	Industrial Engineering	English
LALI	Launching Assembly Lines	English
LEPR	Lean Production and CIP	English
LOCO	Logistics Consulting & Change Management	English
MAFS	Material Flow Simulation	English
MMAN	Materials Management	English
SEWC	SAP Extended Warehouse Management (Customizing)	English
SEWM	SAP Extended Warehouse Management (Processes)	English
SIXS	Process Optimization with Six Sigma	English

Additionally, the following courses from the German Bachelor's programme Logistik (BLO) can be taken:

Module ID	Module name	Language of instruction
DFAB	Digitale Fabrik	German
FAPL	Fabrikplanung & Ergonomie	German
IENG	Industrial Engineering	German
LOTR	Logistik- und Transportrecht	German
MASI	Materialflusssimulation	German
MWIR	Materialwirtschaft	German
POPT	Produktionsoptimierung & KVP	German
VNPR	Vernetzte Produktion	German

For more information about these courses, please refer to the Module Handbook for the B.Eng. Programme Logistik (BLO).

ADPU - Advanced Purchasing

Module profile				
Module ID	ADPU			
Module name	Advanced Purchasing			
Exam number according to degree programme	BWW -	IBE 3817228	BLO -	IBL 3817228
Duration	1 semester			
Frequency	Winter and/or summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Machholz			
Lecturer(s)	Prof. Dr. Machholz			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 4th semester/ 5th semester Core elective module Applicable for Purchasing	- - - -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module STPU.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO

Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Describe, analyse and use modern tools for global purchasing. • Gain profound understanding about state-of-the art e-procurement tools, processes and systems. • Learn to analyse portfolios, processes and organizational forms of procurement departments. • Be enabled to identify weaknesses and threats. • Propose optimized solutions for global companies/blue chips, as well as for small and medium enterprises (SMEs). • Gain specific insights regarding new tools (AI, game theory, social buying) and smart contracts (obsolescence mgmt.). • Be qualified for a new, technology driven business and process environment (IoT, Industry 4.0). • Learn about future job opportunities in procurement and their required skills sets.
Contents	• Kraljic Matrix – product portfolios/views • Purchasing chessboard: What happens at level 2 and 3?, detailed tools & many more examples for these (level 1) topics, Seek joint advantage with suppliers, Change nature of demand, Increase competition among suppliers, Manage spend • E-Procurement (B2B, B2C, Catalogue systems/Amazon-like buying) • P- 2-P (procure to pay) Processes • Game theory in procurement- what is this and where is it used? • Organizational forms of procurement: lead buyer organization vs. category management vs. shared services vs. 3rd party service providers • Procurement 4.0: Processes, Automation + Systems (e.g. Pool4Tool, Risk Methods, Orpheus spend cube), Artificial Intelligence/Cognitive Systems (e.g. IBM Watson), Future roles of CPOs/strategic and operational purchasing, Young Professionals /required skills & development opportunities in procurement, 3D printing and its pot. impacts on manufacturing in low costs countries

Literature	• Spiller, P./Reinecke, N./Ungerman, D./Teixera, H. (2014): Procurement 20/20- Supply Entrepreneurship in a changing world, Hoboken /NJ: Wiley. • Kraljic, P.: Purchasing Must Become Supply Management - Harvard Business Review 61 (5) p. 109-117, 1983, Boston: HBR. • Schuh, C./Kromoser, R./Strohmer, M./Perez, A. (2017): Triplat – The purchasing chessboard, 3rd edition, Berlin, Heidelberg: Springer Verlag (+3rd edition 2017). • Kaufmann, L./Ehrgott, M./Reimann, F. (2013): Selected cases in Supply Management, Berlin : EMP Science edition, 1st edition. • Machek, F./Möhrstädt, D.G./Schmiezek, J. (2012): Social buying: Revolution im Einkauf, Köln:Rainer Machek Verlag • Building a workforce for the future, Harvard Business Review Oct. 2016, p. 49-63, Boston:HBR. • Brynjolfsson, E. (*MIT*)/McAfee, A. (*MIT*) (2014): The 2nd machine Age, New York, London : W.W Norton & Company Inc.

COIN - Connected Industry

Module profile				
Module ID	COIN			
Module name	Connected Industry			
Exam number according to degree programme	BWW -	IBE 3817238	BLO -	IBL 3817238
Duration	1 semester			
Frequency	Winter and/or summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Engelmann			
Lecturer(s)	Prof. Dr. Engelmann; Prof. Dr. Schmitt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 4th semester/ 5th semester Core elective module Applicable for Production	- - - -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Establish communication between networked technical devices. • Recognize unique features and characteristics of smart sensors. • Design data storage concepts. • Distinguish and evaluate Internet communication concepts. • Integrate Internet services in their own projects. • Abstract and implement processes and simple visualizations of practical tasks.
Contents	• Terms and concepts of industry 4.0 at a glance • Advanced network technology • Introduction to machine-machine communication • Characteristics and selection of smart sensors • Data management • Internet technologies and services • Graphical programming with Node-RED
Literature	• Rayes, A./Salam, S. (2016): Internet of Things From Hype to Reality: The Road to Digitization, Springer. • Meier, A./Kaufmann, M. (2016): SQL- & NoSQL-Databases, Springer. • Alasdair G. (2016): Industry 4.0 - The Industrial Internet of Things. Apress. • Robertazzi, T.: Introduction to Computer Networking. Springer International Publishing.

FPER - Factory Planning and Ergonomics

Module profile				
Module ID	FPER			
Module name	Factory Planning and Ergonomics			
Exam number according to degree programme	BWW -	IBE 3815410	BLO -	IBL 3917101
Duration	1 semester			
Frequency	Winter and/or summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Deutschle			
Lecturer(s)	Prof. Dr. Bräutigam; Prof. Dr. Deutschle; Prof. Dr. Engelmann; Prof. Dr. J. Schmitt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 4th semester/ 5th semester Core elective module Compulsory for Production	- - - -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful completion of the module WWIG or ECSB.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO

Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Explain the content and importance of the planning phases. • Design a suitable target system for the factory planning and to use it for the evaluation of planning variants. • Simplify, to depict, to evaluate and systematically redesign value streams. • Select suitable methods for layout planning and to design or optimize material flow optimized layouts. • Differentiate the terms work load, performance capacity and strain. • Design simple manual work systems using ergonomic standards. • Describe and evaluate basic environmental work conditions. • Carry out and interpret simple ergonomic risk assessments.
Contents	• Systematic approach to factory planning • Design and use of target systems • Value-benefit-analysis • Selection criteria and selection of factory locations • Site master plan, building planning • Value stream analysis and value stream design • Streamlined factory layout planning: triangle grid method, permutation method • Ergonomics: basic definitions and terms • Human performance capability • Laws, standards and guidelines for operational safety and health • Human work work design, examples of industrial work place design (work place, tools, environment, organization) • Ergonomic risk assessment

Literature	Current edition of: • Rother, M./Shook, J. (2002): Learning to see, Lean Enterprise Institute. • Stephens, M. P./Meyers, F. E. (2010): Manufacturing Facilities Design & Material Handling, 4th ed., Pearson Prentice Hall, New Jersey. • Freivalds, A. (2014): Niebel‘s Methods, Standards, and Work Design, 13th ed., McGraw Hill. • Erlach, K. (2013): Value Stream Design - The way towards a lean factory, Springer Verlag, Berlin, Heidelberg.

INEN - Industrial Engineering

Module profile				
Module ID	INEN			
Module name	Industrial Engineering			
Exam number according to degree programme	BWW -	IBE 3817201	BLO -	IBL 3817201
Duration	1 semester			
Frequency	Winter and/or summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Deutschle			
Lecturer(s)	Prof. Dr. Bräutigam; Prof. Dr. Deutschle; Prof. Dr. Engelmann; Prof. Dr. J. Schmitt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 4th semester/ 5th semester Core elective module Applicable for Production	- - - -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful completion of the modules WWIG or ECSB.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO

Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Describe the term authority and competence for the role of the industrial engineer. • Select and apply methods for the collection, evaluation and application of operational data. • Describe, evaluate and suggest improvements for work systems by using operational data. • Differentiate process types and process times and to use them for the design of work systems. • Design standard work places respecting economic and human aspects of work. • Describe the importance of setup times and apply methods for their reduction. • Evaluate influencing factors for standard times and to create standard time modules. • Evaluate and select work systems from an economic standpoint.
Contents	• Successful companies, human work and REFA • Social competencies of the REFA industrial engineer • REFA work system • Process-oriented organisation • Management of operational data • Task and work flow • Human work design • Work system design • Setup time • Creation of standard time modules • Predetermined time systems • Cost calculation with operational data • Basics of wage tariffs, job evaluation and performance evaluation The module is based on content of the "REFA Basic Training 2.0". REFA offers students the possibility to complete the course theory and to participate in additional courses and workshops with the goal to achieve the "REFA Basic Training 2.0" as an additional job qualification.

Literature	Current edition of: • REFA (2014): *REFA Basic Training 2.0*, REFA Bundesverband. • Freivalds, B./Niebel, W. (2014): *Niebel's Methods, Standards, and Work Design*, 13th ed., McGraw Hill, New York. • Stephens, M.P./Meyers, F.E. (2013): *Manufacturing Facilities Design & Material Handling*, 5th ed., Pearson Prentice Hall, New Jersey. • Crowson, R. (2006): *The Handbook of Manufacturing Engineering: Product Design and Factory Development*, 2nd ed., CRC Taylor & Francis, Boca Rayton.

LALI - Launching Assembly Lines

Module profile				
Module ID	LALI			
Module name	Launching Assembly Lines			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL 3917102
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Bremer			
Lecturer(s)	Prof. Dr. Bremer			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE - - -	BL - - -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Background in production logistics, operations management and oper-ations research.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Describe the industrial engineering and logistics challenges with respect to launching (i.e. bringing into operations) multi-model, multi-variant assembly lines. • Apply a systematic approach to distribute assembly steps between pre-assembly workplaces and assembly line. • Select and implement an OR algorithm balancing the workload on the assembly line's workstations for minimum cycle time. • Apply Methods-time-Measurement to collect the data for the line-balancing algorithm. • Design and implement material staging to both pre-assembly area and assembly line for a minimum work-in-process inventory. • Prepare suitable information for a worker information system • Manage a launching project as a team using an agile project management approach. • Evaluate individual team member's capabilities against the challenges of a launching project and assign tasks accordingly, including defining strategies how to fill knowledge and skill gaps.

Contents	In this course, students will explore the challenges of launching an assembly line in a close-to-reality case study, which comprises a multi-model, multi-variant assembly line, a pre-assembly area, a central warehouse, a material staging area, and an external supplier.
	• Introduction:
	  ○ Launching assembly lines: Industrial engineering and logistics challenges
	  ○ SimCar case study: Set-up, technical details and team assignment
	  ○ Agile project management: SCRUM
	• Distributing assembly steps
	  ○ First-level allocation between pre-assembly area and assembly line
	  ○ Second-level allocation within the assembly line and line balancing
	  ○ OR algorithms for line balancing: selection and implementation
	  ○ Data collection for the line balancing algorithm: Methods-time Measurement
	• Material staging
	  ○ Material staging strategies: Order-driven vs. consumption-driven
	  ○ JiT- and JiS-supply
	  ○ Set-building
	• Worker information systems
	  ○ Logistics-related instructions
	  ○ Assembly-related instructions

Literature	• Boysen, N./ Fliedner, M./ Scholl, A. (2008): Assembly Line Balancing: Which Model to Use When?, in: International Journal of Production Economics, Vol. 111, No. 2, pp. 509-528. • Karger, D. W./ Bayha, F. H. (1987): Engineered work measurement. The principles, techniques, and data of methods-time measurement background and foundations of work measurement and methods-time measurement, plus other related material, 4th ed., New York: Industrial Press. • McKenna, D. (2016): The Art of Scrum. How Scrum Masters Bind Dev Teams and Unleash Agility, Berkeley: CA Press. • Thomopoulos, N. T. (2014): Assembly Line Planning and Control. Cham: Springer.

LEPR - Lean Production and CIP

Module profile				
Module ID	LEPR			
Module name	Lean Production and CIP			
Exam number according to degree programme	BWW -	IBE 3815310	BLO -	IBL 3815310
Duration	1 semester			
Frequency	Winter and/or summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Bräutigam			
Lecturer(s)	Prof. Dr. Bräutigam; Prof. Dr. Engelmann; Prof. Dr. Schmitt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 4th semester/ 5th semester Core elective module Compulsory for Production	- - - -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Describe the individual elements, the relationships and the underlying philosophy of Lean Management (LM). • Explain the underlying philosophy of LM. • Select and apply the various methods and tools of LM depending on the individual case. • Recognize the links and differences with classical production control models. • Derive elements of Lean Management on their own and to compare different production systems. • Determine the requirements of the process participants (stakeholders). • Apply the taught methods and tools of LM in various application scenarios. • Reflect the obtained results in the team.

Contents	Lean Management Methods and Tools • Kaizen • Value stream design • Levelling • 5S • Kanban • SMED Control of material and information flow • Push - Pull • Shop Floor Management Cycle • Visual Management • Basics SCM Examples for production systems in practice
Literature	• Rother, M. (2009): Learning to See: Toyota Kata, McGraw Hill Professional. • Liker, J.K. (2004): The Toyota Way – 14 Management Principles from the World´s greatest manufacturer, Tata McGraw. • Liker, J.K./Meier, D.P. (2005): The Toyota-Way Fieldbook. McGrawHill.

LOCO - Logistics Consulting & Change Management

Module profile				
Module ID	LOCO			
Module name	Logistics Consulting & Change Management			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL 3337117
Duration	1 semester			
Frequency	Winter and/or summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schmidt			
Lecturer(s)	Prof. Dr. Schmidt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	- - - -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO

Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Identify and prioritize efficiency problems in logistics organizations. • Apply root cause analysing tools for logistics problems and generating solutions in a systematic, methodology based "consulting process". • Debate and communicate solutions in an appropriate form for the target group of potential clients. • Name ways of how an organizational change in logistics areas can be structured and guided in a systematic, methodology-based way.
Contents	• Problem solving and consulting competencies in logistics organizations • Important basic skills for writing and thinking in a logical way (Pyramid Principle, Theory of Constraints approach) • Structure and systematic analysing of logistics problems • Effective communication and "selling" of logistics problem solutions to decision makers in companies • Managing the problem solving process in logistics in a sustainable way – the art of "Change Management"
Literature	• Cox, J. III/ Schleier, J. G. Jr. (Ed.) (2010): Theory of Constraints Handbook, New York: McGraw Hill. • Dettmer, W. H. (2007): The Logical Thinking Process. A Systems Approach to Complex Problem Solving, Milwaukee: ASQ-Press. • Griffiths, C. (2011): Grasp. The Solution, How to find the best answers to everyday challenges, Cardiff: Proactive Press. • Minto, B. (2009): The Pyramid Principle. Logic in Writing and Thinking, 4th ed. Harlow: Prentice Hall. • Rasiel, E./ Paul N. F.: The McKinsey Mind. Understanding and Implementing the Problem Solving Tools and Management Techniques of the World's Top Strategic Consulting Firm, New York: McGraw Hill.

MAFS - Material Flow Simulation

Modul profile				
Module ID	MAFS			
Module name	Material Flow Simulation			
Exam number according to degree programme	BWW -	IBE 3817230	BLO -	IBL 3817230
Duration	1 Semester			
Frequency	Summer semester and/or winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schwindl			
Lecturer(s)	Ms. Ullerich			
Applicability; Semesters according to SER; Type of module; If applicable specialisation		IBE 4th semester/ 5th semester Core elective module Applicable for Production	- -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module MFST.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Create complex simulation models to answer problems by themselves. • Know and apply the necessary fundamental functions as well as the different objects of Plant Simulation, program methods, and use distribution functions to constitute material flow data correctly. • Have a compact overview of the discrete event simulation and solve complex logistic and technical production questioning.
Contents	• Principles of Plant Simulation: • Surface • Objects • Methods and the programing language SIM TALK • Creation of simple simulations models • Distribution functions and statistical tools • Creation of extensive simulation models
Literature	Bangsow, S. (2011): Manufacturing Simulation with Plant Simulation and SimTalk, latest edition, Berlin: Springer. Bangsow, S.: Use Cases of Discrete Event Simulation, latest edition, Berlin: Springer.

MMAN - Materials Management

Module profile				
Module ID	MMAN			
Module name	Materials Management			
Exam number according to degree programme	BWW -	IBE 3817201	BLO -	IBL 3817201
Duration	1 semester			
Frequency	Winter and/or summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Bräutigam			
Lecturer(s)	Prof. Dr. Bräutigam; Prof. Dr. Engelmann			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 4th semester/ 5th semester Core elective module Applicable for Production and/or Pur-chasing	- - - -	IBL 5th semester/ 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	-			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO

Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Explain the role of materials management in a changing environment as a cost driver. • Derive and evaluate materials management as a tool for managing a wide range of goods and services for a variety of stakeholders. ○ Apply the elements of materials management in theory and practice. ○ Distinguish and apply different methods for demand, capacity and resource planning. ○ Create requirements plans for vendors. ○ Plan production, to recognize the context of the added value and to derive measures for optimisation. • Understand all activities in the material flow from supplier to customer and describe strengths and weaknesses. • Analyse the potential of materials management and to derive improvements.
Contents	• Overview of supply chain and production systems • Discussion of the systematic of Materials Management • Introduction to Materials Management and Production Planning Systems • Master Planning (MPS &SIOP) Scheduling • Material Requirement and Manufacturing Resource Planning (MRP & MRPII) • Capacity Management • Production Activity Control • Purchasing (if required) • Forecasting • Inventory Fundamentals • Order Quantities and Optimum Lot Sizing (EOQ) • Independent Demand Ordering Systems and Production Management • Physical Inventory and Warehouse Management
Literature	Arnold, J.R.T./Chapman, S.N./Clive, L.M.: Introduction to Materials Management. latest edition; Prentice Hall.

SEWC - SAP Extended Warehouse Management (Customizing)

Module profile				
Module ID	SEWC			
Module name	SAP Extended Warehouse Management (Customizing)			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL 3337140
Duration	1 semester			
Frequency	Winter and/or summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Bremer			
Lecturer(s)	Mr. Gradt			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	- - - -	IBL 5th semester/ 7th semester Core elective Module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the modules ERLA or ITBL, SEWM.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Set-up the interface between SAP EWM and SAP ERP systems. • Do basic consulting for defining warehouse structures in SAP-EWM and the customizing activities for setting up warehouse structures and operations in an SAP EWM system. • Map logistics processes to SAP EWM using process- and layout-oriented storage control.
Contents	Students will be introduced to the customizing of a SAP EWM system based on the IMG (Implementation Guide) provided with the system.The main goal is to achieve a sound understanding of how to map logistics processes to SAP EWM • Customizing of business process support within SAP ERP and SAP EWM standard • Interfaces between SAP EWM and SAP ERP • Process- and layout-oriented storage control
Literature	Kannapan, B./Tripathy, H./Krishna, V. (2016): Warehouse Management with SAP EWM, Quincy: SAP Press/Rheinwerk Publishing.

SEWM - SAP Extended Warehouse Management (Processes)

Module profile				
Module ID	SEWM			
Module name	SAP Extended Warehouse Management (Processes)			
Exam number according to degree programme	BWW -	IBE -	BLO -	IBL 3337139
Duration	1 semester			
Frequency	Winter and/or summer semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Bremer			
Lecturer(s)	Mr. Gingele			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	- - - -	- - - -	IBL 5th semester/ 7th semester Core elective Module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	SAP Basics.			

Examination	
Particular conditions for the participation in the **exami-nation** according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO

Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Describe the main business processes implemented in the SAP EWM (Extended Warehouse Management) system. • Describe the interface between EWM and an (SAP) ERP system. • Describe the functionality of transactions used within an EWM system to process day-to-day warehouse tasks. • Describe how operational requirements can be mapped into an SAP EWM system.
Contents	• System environment • SAP EWM processes and functions • Integration of SAP EWM and SAP ERP • Organizational units and master data • Warehouse tasks and warehouse order • Warehouse monitor • Easy Graphic Framework • Radio Frequency Identification • Goods receipt • Goods issue • Storage control • Replenishment • Inventory • S/4HANA foray
Literature	• Sachan, N./Jain, A. (2018): Warehouse Management in SAP S/4HANA, Quincy: SAP Press/Rheinwerk Publishing. • Kannapan, B./Tripathy, H./Krishna, V. (2016): Warehouse Management with SAP EWM, Quincy: SAP Press/Rheinwerk Publishing.

SIXS - Process Optimization with Six Sigma

Module profile				
Module-ID	SIXS			
Module name	Process Optimization with Six Sigma			
Exam number according to degree programme	BWW -	IBE 3817237	BLO -	IBL 3817237
Duration	1 semester			
Frequency	Winter semester			
Credit hours (SWS)	4			
ECTS-Credits (CP)	5			
Workload Respective hours	Total workload 150	Amount of Attend-ance time 60	Amount of Self-study time 90	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	Prof. Dr. Schwindl			
Lecturer(s)	Prof. Dr. Schwindl			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 4th semester Core elective module Applicable for Production	- - - -	IBL 5th semester Core elective module -
Particular conditions for the participation in the module according to the SER	-			
Recommended prerequi-sites for the participation in the module	Successful completion of the modules STAT/STAC and PRQS /PRQA.			

Examination	
Particular conditions for the participation in the exami-nation according to the SER appendix	-
Examination - type	sP (= written examination) according to § 23 APO **or** soP (= other examined assignment) according to §§ 26, 27 APO

Examination - length/format	• If sP: 90 minutes • If soP **one** of the following formats: ○ seminar paper/research project ○ presentation ○ multimedia presentation ○ documentation report ○ colloquium ○ written assignment ○ portfolio assignment ○ practical or artistic assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Plan the concept based systematic procedure given in the context of Six Sigma project initiatives in industrial daily business on the basis of real data and case studies. • Develop robust processes according the zero-defect-philosophy. • Design, plan, develop and define process parameters and activities to improve productive processes permanently and consistently in both their technical and economic efficiency. • Apply the DMAIC cycle on quantitative data-driven analysing and planning methods. • Plan and execute a case based Six Sigma project to improve a production process based on data analysis methods.
Contents	• Six Sigma specific project management: DMAIC structure, SWOT analysis, probability and regression based project management • Sigma Estimation, Sample Size Determination, Statistical Quality Methods • Define Phase: Project Charter, Affinity diagram, Kano's Model, DPU and DPMO • Measure Phase: VoC, VoP, Sources of Variation, Probability Models, Capability Analysis • Analyze Phase: Process Mapping, Parameter Estimation, Testing of Hypothesis, Goodness-of-Fit Tests, Regression Analysis, Nonlinear Regression, Analysis of Variance, Root Cause Analysis, Analyze Checklists, Relevance for Managers • Improve Phase: Balanced Scorecard (BSC), Design of Experiments, Process Mapping for Improvements, Simulation Techniques, Process Implementation and Validation, Improve Check Sheets, etc. • Control Phase: Statistical Process Control, Poka Yoke, Process Dashboards, etc. • Sigma Level Estimation, Continuous Improvement (Deming and Crosby's Quality Philosophy, data-driven) The students are given the opportunity to obtain a real Six Sigma green belt certificate after they passed the examination successfully.

Literature	• Cano, E.L./Moguerza, J.M./Redchuk, A. (2012): Six Sigma with R, Springer, New York. • Evans, J.R./Lindsay, W.M. (2015): An Introduction to Six Sigma & Process Improvement, 2nd ed., Stamford. • Carroll, C.T. (2013): Six Sigma for Powerful Improvement, Taylor & Fancis, New York.

Appendix 2: Catalogue of Courses for the Module Core Competences 2

For the module Core Competences 2, one of the following courses must be completed. As the courses on offer are changing regularly, the actually available courses will be published every semester.

Module ID	Module name	Language of instruction
ICC	Intercultural Communication	English
FAPR	Facilitation and presentation	English
STCO	Stress- and Conflict Management	English
TISE	Time and Self Management	English

Additionally, the following courses from the German Bachelor's programme Logistik (BLO) can be taken:

Module ID	Module name	Language of instruction
IKO	Interkulturelle Kompetenz	German
MOPR	Moderation und Präsentation	German
STKO	Stress- und Konfliktmanagement	German
ZESE	Zeit- und Selbstmanagement	German

For more information about these courses, please refer to the Module Handbook for the B.Eng. Programme Logistik (BLO).

ICC - Intercultural Communication

Module profile				
Module ID	ICC			
Module name	Intercultural Communication			
Exam number according to degree programme	BWW -	IBE 3827300	BLO -	IBL 3917600
Duration	1 semester			
Frequency	Winter and summer semester			
Credit hours (SWS)	2			
ECTS-Credits (CP)	2			
Workload Respective hours	Total workload 60	Amount of Attend-ance time 30	Amount of Self-study time 30	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	N.N.			
Lecturer(s)	Ms. Shendrick; Prof. Dr. Stadelmann			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 7th semester Elective mod-ule -	- - - -	IBL 7th semester Elective mod-ule -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module COC1.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	**One** of the following formats: • seminar paper/research project • multimedia presentation • written assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Outline the most important theoretical approaches to intercultural communication. • Explain the impact of one´s own cultural conditioning on values, perception, expectations and behavior. • Interpret the behaviour of people from different cultures considering their respective cultural values. • Create and apply effective communications strategies to overcome obstacles in intercultural encounters. • Analyse intercultural business encounters by applying intercultural terminology, theory and methods and adopt the own behavior accordingly.
Contents	• Introduction and Basic Knowledge: concept of culture, cultural identity, perception and interpretation, stereotypes and prejudices. • Cultural Dimensions as a theoretical framework to compare cultures: mainly individualism vs. collectivism, high vs. low power distance, deal- vs. relationship orientation. Focus is on different communication styles (verbal and non-verbal communication). • Application in business: multicultural teamwork, virtual teamwork, meetings with team members from different cultures, presentations in front of an international audience, leading culturally diverse teams.
Literature	• Adler, N. J./Gundersen, A. (2008): International dimensions of organizational behavior. 5th edition, Mason: Thomson South-Western. • Comfort, J./Franklin, P. (2014): The Mindful International Manager. How to work effectively across cultures, 2nd edition, London: Kogan Page. • Hofstede, G./Hofstede, G. J./Minkov, M. (2010): Cultures and organizations. Software of the mind: International cooperation and its importance for survival. 3rd edition, New York: McGraw-Hill. • Schroll-Machl, S. (2016): Doing business with Germans. Their perception, our perception, 6th edition, Göttingen: Vandenhoeck & Ruprecht.

FAPR - Facilitation and presentation

Module profile				
Module ID	FAPR			
Module name	Facilitation and Presentation			
Exam number according to degree programme	BWW -	IBE 3827300	BLO -	IBL 3917600
Duration	1 semester			
Frequency	Winter and summer semester			
Credit hours (SWS)	2			
ECTS-Credits (CP)	2			
Workload Respective hours	Total workload 60	Amount of Attend-ance time 30	Amount of Self-study time 30	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	N.N.			
Lecturer(s)	Ms. Körner			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 7th semester Elective mod-ule -	- - - -	IBL 7th semester Elective mod-ule -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module COC1.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	**One** of the following formats: • seminar paper/research project • multimedia presentation • written assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Outline facilitation techniques and select appropriate methods depending on the situation. • Lead communication processes in a group in such a way that group members can contribute with their skills and achieve the group's objectives. • Adapt topics in a presentation to the target group, describe the content in a structured way and adjust the language accordingly. • Use media and visualize content in a suitable way. • Present in a convincing and audience-oriented way.
Contents	• **Facilitation** ○ The role of the facilitator ○ Workshop planning & preparation ○ Basic facilitation techniques ○ Managing group dynamics • **Presentation** ○ Preparation of a presentation ○ Basic parts of a presentation ○ Preparing slides ○ Essential presentation skills
Literature	• Hunter, D. (2009): The Art of Facilitation. Hoboken: John Wiley & Sons. Inc. • Weiss, M. (2015): Presentation Skills. Educate, Inspire and engage your audience. New York: Business Expert Press. • Williams, E. J. (2012): Presentations in English. Oxford: Macmillan. • Wilkinson, M. (2012): The secrets of facilitation. The SMART guide to getting results with groups. San Francisco: Jossey-Bass.

STCO - Stress- and Conflict-Management

Module profile				
Module ID	STCO			
Module name	Stress- and Conflict-Management			
Exam number according to degree programme	BWW -	IBE 3827300	BLO -	IBL 3917600
Duration	1 semester			
Frequency	Winter and summer semester			
Credit hours (SWS)	2			
ECTS-Credits (CP)	2			
Workload Respective hours	Total workload 60	Amount of Attend-ance time 30	Amount of Self-study time 30	

Teaching format	S (= seminar)
Language of instruction	English

Organisation				
Responsible	N.N.			
Lecturer(s)	Hr. Stüwe			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 7th semester Core elective module -	- - -	IBL 7th semester Core elective module -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module COC1.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	**One** of the following formats: • seminar paper/research project • multimedia presentation • written assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	After successful completion of the module, the learner should be able to: • Define, explain and evaluate stress situations. • Derive and create concrete forms of action to deal with stress situations. • Use the preventive measures learned. • Name mediative techniques and to use them situationally. • Recognize conflicts, understand and develop solutions based on specific patterns.
Contents	• Introduction and overview of current stress and conflict management theories • Recognize, evaluate and find solutions to stress • Understand healthy and unhealthy stress • Development of individual stress regulators • Identify and evaluate conflicts and find solutions • Solutions for conflicts in groups • Strategies for dealing with conflicts
Literature	• Fisher, R./Ury, W. (2011): Getting to Yes: Negotiating Agreement Without Giving In, London: Penguin Books. • Berne, E. (2002): Games People Play: The Psychology of Human Relationship, New York: Grove Press. • Glasl, F. (1999): Confronting conflict: a first-aid kit for handling conflict, Stroud, Gloucestershire: Hawthorn Press.

TISE - and Self-Management

Module profile				
Module ID	TISE			
Module name	Time- and Self-Management			
Exam number according to degree programme	BWW -	IBE 3827300	IBE -	IBL 3917600
Duration	1 semester			
Frequency	Winter and summer semester			
Credit hours (SWS)	2			
ECTS-Credits (CP)	2			
Workload Respective hours	Total workload 60	Amount of Attend-ance time 30	Amount of Self-study time 30	
Teaching format	S (= seminar)			
Language of instruction	English			

Organisation				
Responsible	N.N.			
Lecturer(s)	Prof. Dr. Stadelmann			
Applicability; Semester according to SER; Type of module; If applicable specialisation	- - - -	IBE 7th semester Elective mod-ule -	- - - -	IBL 7th semester Elective mod-ule -
Particular conditions for the participation in the **module** according to the SER	-			
Recommended prerequi-sites for the participation in the **module**	Successful passing of the module COC1.			

Examination	
Particular conditions for the participation in the **examination** according to the SER appendix	-
Examination - type	soP (= other examined assignment) according to §§ 26, 27 APO
Examination - length/format	**One** of the following formats: • seminar paper/research project • multimedia presentation • written assignment The concrete lenth/format of the examination will be determined in the curriculum and published at the beginning of each semester in the e-Learning course "Studien- und Prüfungsangelegenheiten/study and examination matters".
Language of examination	English
Condition for the award of credit points	Successful passing of the examination.

Learning outcomes, Contents and Literature	
Learning outcomes	On successful completion of this module, the learner should be able to: • Distinguish different dimensions of time, as well as cultural and personal preferences in dealing with time. • Reflect and analyse one's own way of dealing with time and one's own work behaviour. • Name, understand and put into practice techniques of time- and self-management. • Set and realise goals and priorities in the short, medium and long term. • Recognise and analyse personal stress factors and eliminate them using preventive techniques.
Contents	• Basics of time and self-management • Typical problems in managing time • Setting objectives and defining steps to achieve them • Planning (Performance curve, priorities, planning techniques) • Work and study organization (learning, transcripts, workplace, organisation system) • Stress and stress management
Literature	• Forsyth, P. (2016): Successful Time Management. How to be organized, productive and get things done, 5th edition, London: Kogan Page. • Lussier R. N. (2017): Human Relations in Organizations. Applications and Skill Building, 10th edition, New York: McGraw-Hill Education. • Zimbardo, P. G./Boyd, J. (2010): The time paradox. Using the new psychology of time to your advantage. London: Rider.