Modulhandbuch: Pool International (English Lectures for Contact students) F MB CP

Nr.	Sem.	Ver.	Modulbezeichnung	Lehrende(r)	Fakultät
anually in winter semester					
1	1	0	PI Simulation of Motion	Weidner	MB
2	1	1	PI Fundamentals of Vibration Engineering	Behn	MB
3	1	0	PI Finite Element Method	Raßbach	MB
4	1	0	PI Tools for metal forming	Christ	MB
5	1	0	PI Intercultural Learning and Eventmanagement	Kolev	MB
6	1/2	0	PI Fossil and bio fuels, lubricants and plastics	Beugel	MB
7	1	1	PI Surface Engineering & Coatings Technology	Dorner-Reisel	MB
anually in summer semester					
8	2	0	PI Numerical Heat Transfer Simulation	Pietzsch	MB
9	2	0	PI Automotive Drive Systems	Weidner	MB
10	1/2	0	PI Fossil and bio fuels, lubricants and plastics	Beugel	MB
11	2	0	PI Production Technology	Löser	MB
12	2	0	PI Factory Planning and Enterprise Logistics	Huxholl	MB

HOCHSCHULE SCHMALKALDEN
UNIVERSITY OF APPLIED SCIENCES

Modulname	**PI Simulation of Motion**	401
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Georg Weidner	
Qualifikationsziele	On completion of this course, the students should have some background knowledge on Multibody Systems. They should be able to simulate the kinematic and dynamic behaviour of mechanisms with a motion simulation software.	
Modulinhalte	1. Bodies and their Properties 2. Joints (pin joints, slot joints, curve joints) 3. Springs (linear springs, rotational springs) 4. Dampers (linear dampers, rotational dampers) 5. Actuators (linear actuators, motors) 6. Collision 7. Friction 8. Initial Conditions 9. Parameters of Simulation (time step, accuracy) Projects: 1. Harmonic vibrations 2. Non-Linear vibrations 3. Friction problems 4. Compensation of weight 5. Dynamics of crank mechanisms 6. Impact problems 7. Windscreen-wiper 8. Four-stroke engine	
Lehrformen	Vorlesung (2 SWS) Praktikum (2 SWS)	
Voraussetzungen für die Teilnahme	fundamentals in physics (mechanics of rigid bodies)	
Literatur/multimediale Lehr- und Lernprogramme		
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	examination in computer lab.: 120 min.	
Semester	1 Fachsemester	
Häufigkeit des Angebots	annually in the winter semester	
Dauer	1 Semester	

Modulname	**PI Simulation of Motion**	401
Art der Lehrveranstaltung	anually in winter semester	
Besonderes		

HOCHSCHULE SCHMALKALDEN
UNIVERSITY OF APPLIED SCIENCES

Modulname	**PI Fundamentals of Vibration Engineering**	404
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr.-Ing. habil. Carsten Behn	
Qualifikationsziele	This course is an introduction to the dynamics and vibrations of lumped-parameter models of mechanical systems, i.e., mechanical vibration systems with finite degrees of freedom. Starting with several descriptions to govern the equations of motion for systems of particles and rigid bodies in planar motion, students will become familiar with the Lagrangian Equations of the 2nd kind, with the D'Alembert's principle, and Newton-Euler mechanics (Principles of Linear and Angular Momentum). Having these tools at hand, the following topics cover several vibration systems with a single degree of freedom, their analytical treatment and the development of substitution models for complex (nonlinear) systems. The lecture proceeds in introducing free undamped and damped systems, forced undamped and damped systems (from the general case to the harmonic one). After this course, students are able to evaluate free and forced vibration of linear/linearized mechanical systems and to determine the main characteristics of such systems in context to their vibration behavior.	
Modulinhalte	1. Introduction 2. Modeling Aspects 3. Fundamental Laws from Dynamics (Newton-Euler, D'Alembert, Lagrange) 4. Classification of Vibration Systems and Modeling 5. Free undamped Vibrations with DoF=1 6. Free damped Vibrations with DoF=1 7. Forced undamped Vibrations with DoF=1 (general case to harmonic one) 8. Forced damped Vibrations with DoF=1 9. Outlook to subsequent systems: DoF=n, DoF=∞ Optional Add-On: • Practical courses including setting up a report • Programming in Maple / MatLab	
Lehrformen	Vorlesung (4 SWS)	
Voraussetzungen für die Teilnahme	Kinematics, Dynamics	

Modulname	**PI Fundamentals of Vibration Engineering**	404
Literatur/multimediale Lehr- und Lernprogramme	• R.C. Hibbeler: Engineering Mechanics: Dynamics, 12th edtion, Pearson • K. Zimmermann, I. Zeidis, C. Behn: Mechanics of Terrestrial Locomotion, Springer • J.P. Den Hartog: Mechanical Vibrations, Dover	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	written examination: 120min	
Semester	1 Fachsemester	
Häufigkeit des Angebots	annually in the winter semester	
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in winter semester	
Besonderes		

HOCHSCHULE SCHMALKALDEN
UNIVERSITY OF APPLIED SCIENCES

Modulname	**PI Finite Element Method**	406
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Hendrike Raßbach	
Qualifikationsziele	On completion of this course, the students should have some basic knowledge on the method of finite elements and they should be able to build up simple FEM-models. Some examples will be solve with the program ANSYS. The students can critically judge and interpret results.	
Modulinhalte	Basic Ideas of the Method of Finite Elements Different Finite Elements for Structural Mechanics The Applications of FEA Basic Procedure Creating a FEA-Model Accuracy, Reliability, Errors Possibilities for Verification Structure of FEAPrograms ANSYS – The Layout of the GUI Goal and StartingPoint of a FE-Analysis Reasonable Simplifications Coupling of FEA and CAD-Programs Examples	
Lehrformen	Vorlesung (1 SWS) Praktikum (3 SWS)	
Voraussetzungen für die Teilnahme	fundamentals of technical mechanics	
Literatur/multimediale Lehr- und Lernprogramme	Adams, V., Askenazi, A.; “Building Better Products with Finite Element Analysis”, On Word Press, 1999, SAN 694-0269 Saeed Moaveni; “Finite Element Analysis”; Pearson Education, 2003, ISBN 0-13-191857-5 Supporting documents: scriptum	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	written examination and work with program ANSYS: 120 min	
Semester	1 Fachsemester	
Häufigkeit des Angebots	annually in the winter semester, 2019 in summer semester	
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in winter semester	

Modulname	**PI Finite Element Method**	406
Besonderes		

Modulname	**PI Tools for metal forming**	410
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Eberhard Christ	
Qualifikationsziele	The students should get general knowledge about design of tools for metal-forming and stamp technologies, as bending, deep-drawing, cold metal extrusion, upsetting, hydroforming	
Modulinhalte	Composition of complex tools (different kinds) for metal forming Design of punches and dies Calculation of measures, tolerances, forces, stresses, parts, etc. Materials for tools and workpieces, heat- and surface treatment Machines for metal forming Design of a complex tool for a sheetmetal workpiece (exercise)	
Lehrformen	Vorlesung (2 SWS) Übung (1 SWS)	
Voraussetzungen für die Teilnahme	basics in construction, technical drawing, metal forming Technologies	
Literatur/multimediale Lehr- und Lernprogramme	Supporting documents scriptum	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 45 h + Vorbereitung 105 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	written examination: 120 min	
Semester	1 Fachsemester	
Häufigkeit des Angebots	annually in the winter semester	
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in winter semester	
Besonderes		

HOCHSCHULE SCHMALKALDEN
UNIVERSITY OF APPLIED SCIENCES

Modulname	**PI Intercultural Learning and Eventmanagement**	412
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr.-Ing. habil Emil Kolev	
Qualifikationsziele	• Verfolgen fremdsprachiger ingenieurwissenschaftlicher Lehrveranstaltungen, • Absolvieren fremdsprachiger Fachprüfungen, • Aufbau und Vertiefung sozialer und interkultureller Kompetenzen, • Ausbau organisatorischer und kommunikativer Fähigkeiten	
Modulinhalte	• Hauptbestandteil des Moduls ist eine internationale Vorlesungs- Projekt und Exkursionswoche, an der neben Studierenden des Studienganges Maschinenbau vor allem ausländische Gaststudenten teilnehmen, • Die Studierenden sind aktiv in die Vorbereitung, Durchführung und Nachbereitung der Veranstaltungswoche eingebunden. Sie übernehmen die Organisation von Gruppen, die jeweils aus mehreren ausländischen Gaststudenten bestehen, • Die Inhalte der während der Veranstaltungswoche angebotenen Vorlesungen sind verschiedenen ingenieurwissenschaftlichen Themenkreisen zugeordnet und werden in englischer Sprache angeboten. Die Vorlesungsinhalte werden rechtzeitig angekündigt. Die Dozenten sind Hochschullehrer von Partneruniversitäten und der eigenen Fakultät, • Die Exkursionen beinhalten Besichtigungen produzierender Unternehmen des Maschinen- Anlagen- und Fahrzeugbaus aber auch kultureller Einrichtungen der näheren Umgebung	
Lehrformen	Vorlesung (1 SWS) Projekt (3 SWS)	
Voraussetzungen für die Teilnahme	Anwesenheit bei allen englischsprachigen Vorlesungen und aktive Mitwirkung bei Vor- und Nachbereitung der Veranstaltungswoche. Vorkenntnisse: Englisch, Grundkenntnisse im Maschinenbau	
Literatur/multimediale Lehr- und Lernprogramme	Begleitunterlagen (Tagungsband mit Zusammenfassungen der Vorlesungen)	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	

Modulname	**PI Intercultural Learning and Eventmanagement**	412
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	2.50	1
Leistungsnachweis		
Semester	1 Fachsemester	
Häufigkeit des Angebots	- Wahlpflichtfach im Wintersemester nach Ankündigung, - Angebot entsprechend Nachfrage und vorbehaltlich ausreichender Angebote ausländischer Gastdozenten	
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in winter semester	
Besonderes		

HOCHSCHULE SCHMALKALDEN
UNIVERSITY OF APPLIED SCIENCES

Modulname	**PI Fossil and bio fuels, lubricants and plastics**	418
Modulverantwortlicher/ Modulverantwortliche	Claudia Beugel	
Qualifikationsziele	Students review basics of organic chemistry to understand differences between conventional and bio-based fuels, lubricants and plastics. They should know characteristics of fuels and lubricants. Students should be able to analyze pros and cons of the usage of fossil and bio-based products and to evaluate conventional and alternative production methods.	
Modulinhalte	lab experiments: making and testing of biodiesel 1. overview: structure and names of hydrocarbons (alkanes, alkenes, cyclic hydrocarbons, aromatic compounds, main functional groups) 2. formation and composition of fossil materials (coal, crude oil, natural gas) 3. processing of fossil raw materials into fuels, lubricants and plastics 4. classification and properties of fuels and lubricants 5. composition of biomass (plants oils, starch- and sugar-containing resources, wood, algaes, vegetal and animal residues) 6. structures, names and properties of natural products (saccharides, starch, cellulose, fats, oils, waxes, proteins) 7. production and properties of alternative fuels and lubricants (biogas, bioethanol, plant oils, biodiesel, btl-biomass to liquid, syngas, bioplastics) 8. bioreactors (types, functional principles and operating parameters)	
Lehrformen	Vorlesung (2 SWS) Praktikum (2 SWS)	
Voraussetzungen für die Teilnahme	fundamental chemical skills	
Literatur/multimediale Lehr- und Lernprogramme	Roussak, O./ Gesser, H.D.: Applied Chemistry – A Textbook for Engineers and Technologists, Springer-Verlag, 2013, ISBN 978-1-4614-4262-2 Schobert, H.: Chemistry of Fossil Fuels and Biofuels, Cambrigde University Press, 2013, ISBN 978-0521781268	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	

Modulname	**PI Fossil and bio fuels, lubricants and plastics**	418
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	written examination (120 min) Overall grade: 2/3 written examination; 1/3 prerequisite Prüfungsvorleistung: prerequisite for exam: lab certificate (graded), presentation (graded)	
Semester	1., 2 Fachsemester	
Häufigkeit des Angebots	annually in the winter or summer semester	
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in winter semester anually in summer semester	
Besonderes		

Modulname	**PI Surface Engineering & Coatings Technology**	419
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr.-Ing. habil Annett Dorner-Reisel	
Qualifikationsziele	Surfaces engineering and coatings technology is essential for almost every technology. Motion of industrial parts, like production machines, powertrain components in automotive or airplane applications, envi-ronmental or energy technologies causes wear. The student should understand classical phenomena of tribology. Explanation and information about friction, wear and lubrications are given. Basics about tribological systems and the latest development in reduction of wear and energy consumption are after the course. Mechanical and tribological properties as well as functional behaviour (catalytic effects, energy consumption, signal sending) are essential for surface and coating selection and development. The smaller a device, the bigger the importance of the surface. Bio-devices, MEMS (microelectrome-chanical systems) catalytic surfaces, surfaces interacting with living matter like cells or self-assembling monolayers are already on their way to practical application. Students can recommend methods for surface engineering by treatments and coatings with thin or thick films according the practical demands. The course places great emphasis on micro- and nanostructure of special coatings as well as on trends in technology.	
Modulinhalte	Tribology and coatings for adjusted applications will be content. The software Cambridge Engineering Selector CES (company GRANTA DESIGN Ltd., Cambridge U.K.) is available (Hybrid synthesizer) for designing coatings or other hybrid materials.	
Lehrformen	Vorlesung (2 SWS) Übung (1 SWS) Praktischer Kurs (1 SWS) case study	
Voraussetzungen für die Teilnahme	basic knowledge of material science and chemistry	

Modulname	**PI Surface Engineering & Coatings Technology**	419
Literatur/multimediale Lehr- und Lernprogramme	Mang, T., K. Bobzin, T. Bartels, Industrial Tribology: Tribosystems, Friction, Wear and Surface Engineering, Lubrication, WILEY:VCH Verlag GmbH & Co. KGaA, Weinheim, 2011 Kawai, Y., H. Ikegami, S. Noriyoshi, A. Matsuda, K. Uchino, M. Kuzuya, A. Mizuno, Industrial Plasma Technology: Applications from Environmental to Energy Technologies, WILEY:VCH Verlag GmbH & Co. KGaA, Weinheim, 2010 Wilson, M., K. Kannagara, G. Smith, M. Simmons, B. Raguse, Nano-technology: Basic science and emerging technologies, Chapman & Hall/CRC, London, 2002 Hutchings, I., P. Shipway, Tribology: Friction and Wear of Engineering Materials, Elsevier, Cambridge, 2017	
Lehrbriefautor	general disciplines of engineering and natural sciences (i.e. environmental, mechanical, industrial or electrical engineering)	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	written exam (120 min) and certificate	
Semester	1 Fachsemester	
Häufigkeit des Angebots	annually in the winter semester	
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in winter semester	
Besonderes		

HOCHSCHULE SCHMALKALDEN
UNIVERSITY OF APPLIED SCIENCES

Modulname	**PI Numerical Heat Transfer Simulation**	402
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Robert Pietzsch	
Qualifikationsziele	1. In competition of this subject, the students should be able to calculate independently temperature fields in simple technical structures. They should know the terms and physical quantities of the theory of heat transfer and they should be able to apply them. 2. The thermal calculation environment of the ANSYS program should be mastered safely. One important competence is to select the right finite element type for a given application and to understand the different properties and degrees shape functions. During the examination (120min) the students should demonstrate their skills to solve two heat transfer problems using ANSYS.	
Modulinhalte	1. laws and terms of heat transfer, balance equation of internal energy 2. manual calculation of temperature fields and simple heat transfer problems 3. fundamentals of the Finite Elements Method, elements formulation, shape functions, time integration methods, Introduction in ANSYS environment 4. simple cooling behaviour of a compact body 5. steady heat conduction in a linear rod 6. transient heat conduction in a cooled slab 7. thermal contact of two linear slabs at the face side (contact temperature) 8. transient heat exchange and temperature equalization in a plane structure 9. steady heat conduction and heat transfer capacity of a flat fin 10. thermomechanical coupling of structural and thermal calculation- thermal strains and stresses, thermal distortion 11. axissymmetric problems, solved in a cross section 12. heat conduction in volumetric bodies 13. radiation heat transfer as boundary condition 14. time-dependent thermal boundary conditions	
Lehrformen	Übung (4 SWS)	
Voraussetzungen für die Teilnahme	fundamentals of thermodynamics and heat transfer	
Literatur/multimediale Lehr- und Lernprogramme	Supporting documents: scriptum with solved and explained examples Recommended publications: ANSYS theory manual and elements documentation	
Lehrbriefautor	keiner	

Modulname	**PI Numerical Heat Transfer Simulation**	402
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	practical examination at the computer: 120min	
Semester	2 Fachsemester	
Häufigkeit des Angebots	annually in the summer semester	
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in summer semester	
Besonderes		

HOCHSCHULE SCHMALKALDEN
UNIVERSITY OF APPLIED SCIENCES

Modulname	**PI Automotive Drive Systems**	407
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Georg Weidner	
Qualifikationsziele	On the completion of this course the students should be able to give a quantita-tive contribution to the environmental discussion on motor vehicles. They will do calculations to the longitudinal dynamics and the demand for energy of cars. They can evaluate conventional and alternative drive systems concerning the demand for energy.	
Modulinhalte	1. Rolling resistance and adhesion to road surface 2. Aerodynamic drag 3. Empirical determination of air- and rolling resistance 4. Climbing resistance 5. Acceleration and deceleration 6. Translatory and rotatory inertia 7. Demand for energy and power at several test cycles 8. Maps of combustion Engines 9. Tractive force/speed diagram 10. Calculation of fuel consumption 11. Efficiency maps of DC- and AC-motors 12. Batteries 13. Adaption of electric motors to vehicles 14. Calculation of driving range of electric cars 15. Layouts of hybrid drive systems 16. Calculation of consumption of hybrid drive Systems 17. Transmission systems	
Lehrformen	Vorlesung (4 SWS)	
Voraussetzungen für die Teilnahme	fundamentals in physics (Newtonian mechanics)	
Literatur/multimediale Lehr- und Lernprogramme	BOSCH: Automotive Handbook Naunheimer, Bertsche, Ryborz, Novak: Automotive Transmissions Supporting documents: downloads (script, exercises)	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	written examination: 120 min	
Semester	2 Fachsemester	
Häufigkeit des Angebots	annually in the summer semester	

Modulname	**PI Automotive Drive Systems**	407
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in summer semester	
Besonderes		

Modulname	**PI Production Technology**	420
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Carsten Löser	
Qualifikationsziele	On completion of this course, the students should have some background knowledge and a familiarization with the tasks of work preparation and the planning of manufacturing processes. They should understand the necessary principles for the planning and detailing of processes for the parts manufacturing and assembly. For a better understanding, this is consolidated with practical examples.	
Modulinhalte	Methods and techniques for the planning of parts production and assembly, production processes, assembly processes, work preparation, planning in parts manufacturing processes/assembly, production-oriented construction, selection of raw parts, selection of suitable production processes and their order, comparison of variants, rough and detailed planning of parts production and assembly processes, selection of machines and tools, determination of technological parameters and times, inspection planning, ergonomics, work safety	
Lehrformen	Vorlesung (4 SWS)	
Voraussetzungen für die Teilnahme	Fundamentals of manufacturing processes	
Literatur/multimediale Lehr- und Lernprogramme	will be announced in the course	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis	Written exam (120 min)	
Semester	2 Fachsemester	
Häufigkeit des Angebots	Jährlich im Sommersemester	
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in summer semester	
Besonderes		

HOCHSCHULE SCHMALKALDEN
UNIVERSITY OF APPLIED SCIENCES

Modulname	**PI Factory Planning and Enterprise Logistics**	PI1
Modulverantwortlicher/ Modulverantwortliche	Prof. Dr. Lutz Huxholl	
Qualifikationsziele	The module gives an overview about the activities to be executed when planning a new production site respectively optimising an existing site. It covers aspects to be considered for the location of a new site and the design and the layout of the buildings and processes to be used. The organisation of the processes within the site will also be illustrated.	
Modulinhalte	Coming from the strategic business planning, the core activities related to factory planning, manufacturing and logistics are explained. Key success factors for a factory design fulfilling the market requirements in terms of economic targets, timing and flexibility for model and volume changes are explained.	
Lehrformen	Vorlesung (4 SWS)	
Voraussetzungen für die Teilnahme	Grundkenntnisse des Fabrikprozesses	
Literatur/multimediale Lehr- und Lernprogramme	Aggteleky, B.: Fabrikplanung (1990) Bracht, U.; Geckler, D.; Wenzel, S.: Digitale Fabrik (2018) Grundig, C.-G.: Fabrikplanung (2018) Koether, R. u.a.: Taschenbuch der Logistik (2018) Wiendahl, H.-P.; Reichardt, J.; Nyhuis, P.: Handbuch Fabrikplanung (2014) Schmigalla, H.: Fabrikplanung (1995) Schneider, M.: Lean factory design (2016) Krah, N.: Grundlagen der Fertigungsstättenplanung (2006) Krah, N.: Technische Mittel der Logistik (2006)	
Lehrbriefautor	keiner	
Verwendbarkeit	Pool International (English Lectures for Contact students) F MB PI	
Arbeitsaufwand/Gesamtworkload	Präsenzzeit 60 h + Vorbereitung 90 h = 150 Stunden = 5.0 Credit Punkte	
ECTS und Gewichtung der Note in der Gesamtnote	5.00	1
Leistungsnachweis		
Semester	2 Fachsemester	
Häufigkeit des Angebots	Yearly in summer semester	
Dauer	1 Semester	
Art der Lehrveranstaltung	anually in summer semester	
Besonderes		