



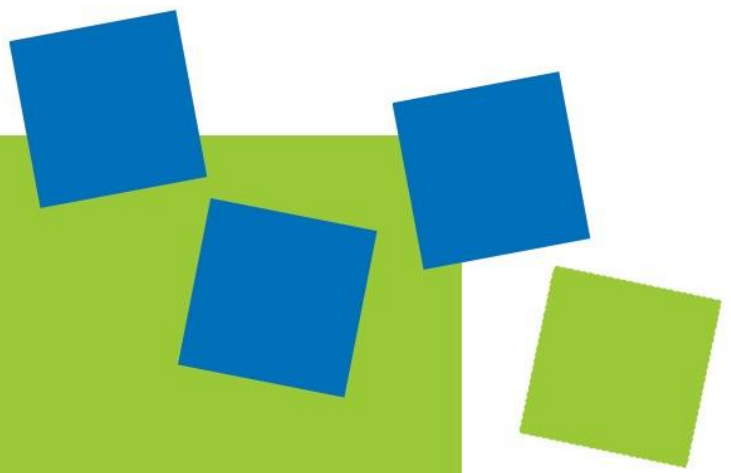
Modulhandbuch

*International Product and Service Management (SPO WS
16/17)*

Fakultät Wirtschaft

Summer term 2022

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1 Introduction to the course of studies

Course of studies			
Short form:	IPM	SPO-Nr.:	HSAN-20161-1
Course management:	Prof. Dr. Barbara Hedderich		
Student advisory service:	Prof. Dr. Barbara Hedderich & Prof. Dr.-Ing. Anke Knoblauch		
ECTS:	90 points (+30 ECTS-points bridging modules for 6+4 Bachelor's programs or the need for a professional bridging semester)		
Standard period of study:	3 or 4 Semester (Depending on the length of the Bachelor's degree; 6 or 7 semesters or the need for a professional bridging semester)		
Admission requirements:	<ol style="list-style-type: none"> 1. a university degree or equivalent with an overall examination mark of 2.0 or better in a course of study at a German or foreign university lasting at least six semesters 2. proof of sufficient knowledge of German (at least Goethe-Zertifikat A1) and English (proven in the selection interview) 3. proof of above-average motivation as a special qualification requirement through a selection interview, especially for grades between 2 and 3 		
Usability:	Master International Product and Service Management		
Learning Outcomes:			
<p>The aim of the Master course "International Product and Service Management" is to convey the future master's graduates the professional, methodological and social skills that are necessary for the independent development and application of scientific knowledge and processes. The graduates also should learn how to act responsible in business and society.</p> <p>With the academic degree "Master of Arts", short form: "M.A.", the graduates receive the qualification for doctoral studies.</p> <p>The students should acquire the requirements to face successfully the challenges of an internationalised world. The students should develop their personality to be able to:</p> <ul style="list-style-type: none"> • think and act entrepreneurially, • actively shape innovations, • reflect ethically on their actions. <p>It is important to enable them to act as bridge builders between the disciplines. They should be able to analyze complex contexts and to react flexibly in them. Therefore, corresponding knowledge, skills and abilities are established. The focus of the Master course "IPM" is the application-oriented, science-based preparation of the students for occupational acting.</p>			
Content:			
<p>Each semester, students acquire 30 credit points.</p> <p>In the summer semester (1st or 2nd semester), a core module is offered. The operational processes are reflected in their complex entirety. The focus is the holistic and interdisciplinary consideration of</p>			

the product. The core module is created as a cross-course module with combined, interdisciplinary courses, projects and case studies.

In the winter semester, students can specialize in a focus module according to their personal inclinations in the technical or business area. In all orientations, the focus is on the product and the processes that are arranged around it. The focus modules are supplemented by elective modules (also language courses) and interdisciplinary, team-oriented project works or case studies. In Ansbach, the focus "Technologies" is offered. With this specialisation in the technical field, students can qualify as intermediaries between the disciplines of engineers and businesspeople. At the TH Valencia, the focus is on „Service Management“.

The last semester concludes the course with the preparation of a master's thesis.

Because of the international cooperation, the language of instruction is English.

Graduation / Academic degree:

Master of Arts (M.A.)

2 Description of Modules

2.1 Core Modules

Product Management			
Module abbreviation:	IPM-ProductManagement	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)	compulsory module	1
Responsible for module:			
Lecturers:	Eichinger, Roberto; Hedderich, Barbara; Hoyer, Johannes; Kaiser, Norbert; Knoblauch, Anke; Schnurpfeil, Roland; Schugk, Michael; Slama, Stefan		
Language of instruction:	English		
Credit points / SWS:	30 ECTS / 15 SWS		
Workload:	Contact hours:		270 h
	Self-study:		630 h
	Total:		900 h
Subjects of the module:	Product Management (IPM-ProductManagement)		
Lecture types:	1: Prj - Projekt		
Examinations:	seminar paper and presentation (during the examination period) (IPM-Product-Management)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
<p>Knowledge: The students should be acquainted with all relevant topics concerning all the different phases of the product process. They should especially know how interdependent those different parts are and how they influence each other.</p> <p>Professional skills: The students are able to organize themselves into efficient groups and solve the challenges posed by projects in the area of product development. They are also able to evaluate their own progress and develop strategies for improving their performance.</p> <p>Social skills: Students enhance their team competence. They are able to work in intercultural environments. They get experience in communicating in interdisciplinary settings</p>			
Content:			
The core module combines project work with theoretical stimuli. Students will work on the project in groups and as far as possible independently. They will be attended to by a coach who will introduce into the project and will be there for the students whenever difficulties and questions arise. The project is complex enough to require students to attend to all the tasks required in a complete product process thus enabling them to experience firsthand all the interdependences of a real life project. A project can never cover in a systematic			

way all relevant aspects of the product process. Therefore theoretical stimuli will be offered to the students parallel to the project work. Those stimuli give some relevant theoretical background and confront students with some examples of current research work allowing them some insights and possibilities for reflection even into those parts of the product process that might not be present or not in the foreground of their own project. At the same time the students get through the stimuli the chance to know our experts in those fields relevant to their project who will also be available for questions that might arise during their own project work.

The project will always be a product or a service that has developed for market launch. It can be a product or a service offered to us by a firm or it can be one that we hope might be marketable. Projects will always start with describing to the group a problem and the development of a convincing solution during the semester will be expected. Depending on the concrete project there will be challenges from different areas to be confronted while preparing designs, technical solutions and a business plan. The development of the solution has to be presented in three milestones.

The first milestone will have a didactic character in the sense that students will get a feedback showing them areas where they have to develop further. Grades will take into account that this is the first feedback opportunity for the students. The presentations of the other two milestones will be evaluated following strictly professional criteria. In the last milestone a finished business plan has to be presented. According to the different phases of the product process the stimuli offer the following subjects:

- Innovation: An introduction of the two relevant perspectives will be offered. The economic perspective allows students to classify their own project according to different approaches that are currently discussed. Apart from the economic content work with research tools will be introduced. The business perspective offers some insights into change management and the necessity of customer orientation of innovation.
- Product Development and Planning: Some insights into technological and business determinants for preparing the marketability of products, introduction into some relevant methods like the KANO model
- Product Realisation: Planning the layout of the plants and the workflow of the production process. Looking at concepts like lean production and the interdependence of the development and the production of the products.
- Sales, Service and Product Disposal: Concepts of technical sales will be introduced, current issues discussed, soft skills like intercultural skills will also mentioned.

Literature:

Will be specified at the beginning

2.2 Focus Modules

Technology

Biomaterials in Medicine			
Module abbreviation:	IPM-BiomaterialsinMedicine	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Boger, Andreas		
Lecturers:	Boger, Andreas		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 2 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Biomaterials in Medicine (IPM-BiomaterialsinMedicine)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 60 minutes (IPM-BiomaterialsinMedicine)		
	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>Professional Skills: Background on Biomaterials used in Medicine as described in content.</p> <ul style="list-style-type: none"> • Making a research on a topic / question for themselves, followed by sharing and discussing the findings with the other participants (think-per-share). • By doing the research the students will learn to evaluate a special application concerning the questions: <ul style="list-style-type: none"> ○ do it really address a clinical need, ○ what are the relevance for the patients, ○ what are the pros and cons. Possible drawbacks and risks for the user of the product and the patient ○ how the IP-situation looks like on the field of application <p>Social Skills: The one connected to the teaching method think-per-share as mentioned above. The student has the competence to synthesize information from a wide range of sources, is able to present and document the work results systematically and is a team player.</p>			
Content:			
Introduction to Biomaterials in Medicine by the contents asking the following questions:			

- Why do we need / for what do we need Biomaterials especially in orthopedic: goals of fracture treatment?
- How Biomaterials are defined?
- Out of what materials (metals, ceramics, polymers, composite) Biomaterials made for a given application and why?
- Which different kinds - as defined by the origin of the Biomaterials exists ?
 - Synthetic Biomaterials, Allografts, Autografts, Xenografts etc.
- What are the special properties from those materials?
- What are the different applications of Biomaterials in Medicine and open questions behind them?
- What are the reason behind; using the Biomaterial (material group) for the given application (several examples will be discussed)?.
- How to define and describe the functional and Design requirements of Biomaterials products in principle?

Literature:

- BÁRTOLO, Paulo Jorge and Bopaya BIDANDA, 2008. *Bio-materials and prototyping applications in medicine*. New York, NY: Springer. ISBN 978-0-387-47682-7, 9780387476834
- RATNER, Buddy D. and others, 2004. *Biomaterials science: an introduction to materials in medicine*. 2. edition. Amsterdam [u.a.]: Elsevier, Academic Press. ISBN 0-12-582463-7, 978-0-12-582463-7
- Without author. *Biomaterials - Journals* [online]. [Accessed on:]. Available via: <http://www.sciencedirect.com/science/journal/01429612>

Biomaterials in Medicine and Food Technology			
Module abbreviation:	IPM-BiomaMediFoodTechno	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Boger, Andreas		
Lecturers:	Boger, Andreas; Knoblauch, Anke		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Biomaterials in Medicine and Food Technology (IPM-BiomaMediFoodTechno)		
Lecture types:	1: SU/Pr - seminaristischer Unterricht/Praktikum		
Examinations:	written exam, 60 minutes and seminar paper and presentation (IPM-BiomaMediFoodTechno)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
To be determined			
Content:			
To be determined			
Literature:			
Will be specified at the beginning			

Chemical and Biotechnological Products and Production Processes			
Module abbreviation:	IPM-ChemBiotechnProductsProductionProc	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Gaisser, Sibylle		
Lecturers:	Gaisser, Sibylle; Wilisch, Christian		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Chemical and Biotechnological Products and Production Processes (IPM-ChemBiotechnProductsProductionProc)		
Lecture types:	1: SU/Pr - seminaristischer Unterricht/Praktikum		
Examinations:	presentation and/or written exam, 45-60 minutes (IPM-ChemBiotechnProductsProductionProc)		
	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
Basic understanding in natural sciences			
Objectives:			
To be determined			
Content:			
To be determined			
Literature:			
<ul style="list-style-type: none"> • WALSH, Gary, 2008. <i>Pharmaceutical biotechnology: concepts and applications</i>. R. edition. Chichester, England: Wiley. ISBN 978-0-470-01244-4, 0-470-01244-7 • THIEMAN, William J. and Michael A. PALLADINO, 2020. <i>Introduction to Biotechnology</i>. F. edition. Harlow: Pearson Education Limited. ISBN 978-1-292-26177-5 • GEBHARDT, Andreas and Jan-Steffen HÖTTER, 2016. <i>Additive manufacturing: 3D printing for prototyping and manufacturing</i>. Munich: Hanser Publications. ISBN 978-1-5231-0442-0, 1-5231-0442-2 			

Chemical and biotechnological products			
Module abbreviation:	IPM-ChemBiotechnoProd	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Gaisser, Sibylle		
Lecturers:	Gaisser, Sibylle; Wilisch, Christian		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Chemical and biotechnological products (IPM-ChemBiotechnoProd)		
Lecture types:	1: SU/Pr - seminaristischer Unterricht/Praktikum		
Examinations:	seminar paper and presentation (during the examination period) (IPM-ChemBiotechnoProd)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
Basic understanding in natural sciences			
Objectives:			
<p>Knowledge: The students are familiar with additive manufacturing and enzymatic, prokaryotic and eukaryotic production systems in the chemical and pharmaceutical sector. The students will understand the nature and the current state of the art of additive manufacturing. They have broad knowledge of the drug developmental pipeline, the applied research tools and develop an understanding of the mode of action of biopharmaceutical products.</p> <p>Professional Skills: Students are able to assess additive manufacturing strategies and biotechnological processes and their implications for an industrial production process. They have basic skills in some aspects of practical microbiological methods and polymerization methods. The students will be able to select appropriate methods of additive manufacturing, depending on the specific requirements for the part(s) in question.</p> <p>Social Skills: Students are able to carry out independent literature search in a new biotechnology related subject. The students will be able to appreciate the use of additive manufacturing. They can classify and structure the obtained material and are able to present and discuss their results in a case study presentation.</p>			
Content:			
<p>The course is split in two parts.</p> <p>Part 1: Additive Manufacturing – more than 3D printing:</p> <ul style="list-style-type: none"> - polymerization methods - sintering/melting-based methods - lamination methods 			

- extrusion-based methods
- powder/binder methods
- additive manufacturing for biological systems
- applications for rapid prototyping/tooling/manufacturing

Part 2_ Biotechnological Production

Introduction to biotechnology in general and with a focus on the pharmaceutical sector, relevant markets and products (e.g. drugs, vitamins, OTC-products).

- Basics in biology
- Introduction into genetic engineering
- The immune system
- General knowledge of production methods such as fermentation and biotransformation
- Bioproduct purification
- Legal requirements for recombinant protein production

Literature:

Will be specified at the beginning

Computer Simulation Technologies and Control Engineering			
Module abbreviation:	IPM-CompSimulTechnoContrEngi	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Moog, Mathias		
Lecturers:	Moog, Mathias		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		49 h
	Self-study:		101 h
	Total:		150 h
Subjects of the module:	Computer Simulation Technologies and Control Engineering (IPM-CompSimul-TechnoContrEngi)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 60 minutes (IPM-CompSimulTechnoContrEngi)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
<p>Aims – Computer Simulation Technologies:</p> <p>Knowledge: The students are able to</p> <ul style="list-style-type: none"> - locate starting points for the successful use of simulation technologies in product development - understand and judge the use of different simulation tools in various application fields - get an insight in possibilities and limitations of simulation technologies <p>Professional skills:</p> <p>They are</p> <ul style="list-style-type: none"> - familiar with basic concepts of computer simulation - able to choose the correct simulation techniques and the adequate simulation tools in complex problems and use them target-oriented <p>Social skills:</p> <p>They develop the ability to</p> <ul style="list-style-type: none"> - communicate clearly and intelligibly about the use of computer simulation technologies - distribute tasks and to coordinate individual tasks with a team in projects containing simulation aspects - asking target-oriented questions to simulation experts <p>Aims – Control Engineering:</p> <p>Knowledge:</p> <p>The aim of the lecture is to give an introduction to control engineering and automation which means for the students on the one hand to gain an overview of the topics single loop control and feedback loop control in</p>			

principle and on the other hand to get experienced with common control systems, actuators and sensors in real systems. Furthermore, a very broad overview is given on computer controlled machines.

Professional Skills:

The students understand the principles and differences of single loop control systems and feedback loop control systems. By means of an integrated practical training, including three units, they are trained in the basics of pneumatics and designing of a pneumatic system (consisting of sources, drives, sensors and logic elements), corresponding to a simple control problem. The participants understand the principles of programmable logic controllers (PLC).

Social Skills:

The students learn cooperation and mutual learning especially in the practical training units. Furthermore, they extend their English vocabularies by many technical terms and use them frequently in technical discussions.

Content:

Computer Simulation Technologies Content:

- Reasons for the use of computer simulation
- Classification of simulation tools, engineering and applications
- Dynamical systems, models of growth, parameter sensitivity
- Modelling e.g.: CO2 in atmosphere
- Process control simulation
- Event Driven Systems: state charts, application fields
- Introduction to statistical models

Control Engineering Content:

- Control Systems
- Sensors and Actuators
- Signals and Systems
- Feedback Control Systems
- Computer-controlled Machines
- Automated Process Control

Literature:

- VELTEN, Kai, 2009. *Mathematical modeling and simulation: introduction for scientists and engineers*. Weinheim: WILEY-VCH. ISBN 978-3-527-40758-3, 3-527-40758-8
- GOULD, Harvey, Jan TOBOCHNIK and Wolfgang CHRISTIAN, 2007. *An introduction to computer simulation methods: applications to physical systems*. 3. edition. San Francisco ; Munich [u.a.]: Pearson-Addison-Wesley. ISBN 0-805-37758-1
- HANNON, Bruce and Matthias RUTH, 2001. *Dynamic modeling*. 2. edition. New York [u.a.]: Springer. ISBN 0-387-98868-8
- GERSHENFELD, Neil A., 2003. *The nature of mathematical modeling*. R. edition. Cambridge [u.a.]: Cambridge Univ. Press. ISBN 0-521-57095-6

- ACHESON, David J., 1997. *From calculus to chaos: an introduction to dynamics*. Oxford [u.a.]: Oxford Univ. Press. ISBN 0-19-850257-5, 0-19-850077-7
- NISE, Norman S., 2011. *Control systems engineering*. 6. edition. Hoboken, N.J.: Wiley. ISBN 978-0-470-64612-0
- TEWARI, Ashish, 2002. *Modern control design with MATLAB and SIMULINK*. Chichester: John Wiley. ISBN 0-471-49679-0
- BRAMER, Max A., 2007. *Principles of data mining*. London: Springer. ISBN 978-1-84628-765-7, 1-84628-765-0
- WILKIE, Jacqueline, Michael JOHNSON and Reza KATEBI, 2002. *Control engineering: an introductory course*. 1. edition. Basingstoke [u.a.]: Palgrave. ISBN 0-333-77129-X, 978-0-333-77129-7
- HOOPER, Jay F., 2013. *Basic pneumatics: an introduction to industrial compressed air systems and components*. R. edition. Durham, N.C.: Carolina Academic Press. ISBN 978-1-61163-411-2, 1-61163-411-3
- BOLTON, W., 2009. *Programmable logic controllers*. 5. edition. Oxford: Newnes. ISBN 978-1-85617-751-1, 1-85617-751-3

Food Technology			
Module abbreviation:	IPM-Food Technology	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Knoblauch, Anke		
Lecturers:	Knoblauch, Anke		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		48 h
	Self-study:		102 h
	Total:		150 h
Subjects of the module:	Food Technology (IPM-Food Technology)		
Lecture types:	1: SU/Ü/Pr - seminaristischer Unterricht/Übung/Praktikum		
Examinations:	seminar paper and presentation (IPM-Food Technology)		
	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>Knowledge: The student knows processes for food production as well as some basics in the fields of food sensory analysis, nutrition, food packaging and food hygiene. The student is able to describe and evaluate processes and consider aspects of sustainability.</p> <p>Professional skills: The student understands food production processes, can discuss and analyse them from different points of view. New fields of knowledge can be developed, presented, analysed and discussed.</p> <p>Social skills: The student has the competence to synthesize information from a wide range of sources, is able to present and discuss the work results systematically and can work as team player.</p>			
Content:			
<p>Current topics in the field of food technology, examples are chosen from the following areas:</p> <ul style="list-style-type: none"> • flow charts • influence of processing parameters • unit operations (for example drying, freezing, separation processes) • quality management • nutritional aspects 			

- sensory analysis
- packaging
- hygiene and food preservation
- sustainability

Literature:

- VACLAVIK, Vickie, Elizabeth W. CHRISTIAN and Tad CAMPBELL, 2021. *Essentials of Food Science*. 5. edition. Cham: Springer. ISBN 978-3-030-46813-2
- CAMPBELL-PLATT, Geoffrey, 2018. *Food science and technology*. 5. edition. Hoboken, NJ, USA: Wiley Blackwell. ISBN 978-0-470-67342-3

Introduction to Chemistry and Physics for Non-Scientists			
Module abbreviation:	Intr. to Chem. and Physics f. Non.-Scientists	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Hedderich, Barbara		
Lecturers:	Rychkov, Dmtry; Wilisch, Christian		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		60 h
	Self-study:		90 h
	Total:		150 h
Subjects of the module:	Introduction to Chemistry and Physics for Non-Scientists (Intr. to Chem. and Physics f. Non.-Scientists)		
Lecture types:	: SU - seminaristischer Unterricht		
Examinations:	seminar paper and presentation (Intr. to Chem. and Physics f. Non.-Scientists) None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan.			
Recommended prerequisites:			
None			
Objectives:			
A basic understanding of scientific principles is essential in our technological world. This course is specifically aimed at non-scientists or non-engineers to help them gain sufficient understanding to facilitate, for instance, the discussions between project scientists and product managers.			
Content:			
Chemistry: structure of matter, types of chemical bonds, nuclear chemistry, chemical reactions and equilibria, catalysis, introduction to organic chemistry, chemistry and the environment Physics: basic concepts of: mechanics, electricity and magnetism, molecular physics and modern physics			
Literature:			
<ul style="list-style-type: none"> BROWN, Theodore L., Harold Eugene LEMAY and Bruce Edward BURSTEN, 2018. <i>Chemistry: the central science</i>. 14. edition. Harlow: Pearson. ISBN 978-1-292-22132-8 CARDAMONE, Michael J., 2007. <i>Fundamental concepts of physics</i>. Boca Raton, Fla.: BrownWalker Press. ISBN 978-1-59942-433-0, 978-1-59942-434-7 CHAICHIAN, Masud, Hugo PEREZ ROJAS and Anca TUREANU, 2014. <i>Basic concepts in physics: from the cosmos to quarks</i>. Berlin [u.a.]: Springer. ISBN 978-3-642-19597-6, 978-3-642-19598-3 			

Plastics Processing Technology			
Module abbreviation:	IPM-PlasticsProcessingTech	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		
Responsible for module:	Sover, Alexandru		
Lecturers:	Sover, Alexandru		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Plastics Processing Technology (IPM-PlasticsProcessingTech)		
Lecture types:	1: Tuition in Seminars / practical training		
Examinations:	written exam, 90 minutes (IPM-PlasticsProcessingTech)		
	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>Knowledge: The students have knowledge of the basics of plastic materials, their properties and processing technologies as well as their economic importance. They understand the main production methods and the possible applications.</p> <p>Professional Skills: The students are able to understand the difference between the essential plastic materials and the processing technologies used for the production of different components.</p> <p>Social Skills: Teamwork and communication skills by solving tasks in small groups, self-reflection.</p>			
Content:			
<ul style="list-style-type: none"> • Introduction to plastics materials (structure, monomers, polymers) • Development and economic importance of polymer materials • Classification of plastics (thermoplastics, thermosets and elastomers; description, structure and properties) • Rheology (brief overview) • Processing of plastics: Extrusion; Injection Moulding; Thermoforming; Casting; Rapid prototyping • Design and development of plastic components 			

- Plastic assembly techniques (welding)
- Applications with examples
- Recycling

Literature:

- OSSWALD, Tim A., 2017. *Understanding polymer processing: processes and governing equations*. 2. edition. Munich: Hanser Publishers. ISBN 978-1-56990-647-7, 1-56990-647-5
- AGASSANT, Jean-François, Pierre AVENAS and Pierre J. CARREAU, 2017. *Polymer processing: principles and modeling*. 2. edition. Munich ; Cincinnati: Hanser. ISBN 978-1-56990-605-7

Principles of Electrical Engineering and Renewable Energy Systems			
Module abbreviation:	IPM-PrinciElectrEngiRenewEnerSys	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Rosenbauer, Georg		
Lecturers:	Rosenbauer, Georg		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Principles of Electrical Engineering and Renewable Energy Systems (IPM-PrinciElectrEngiRenewEnerSys)		
Lecture types:	1: SU/Pr - seminaristischer Unterricht/Praktikum		
Examinations:	written exam, 120 minutes (IPM-PrinciElectrEngiRenewEnerSys)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
To be determined			
Content:			
To be determined			
Literature:			
Will be specified at the beginning			

Theoretical and practical introduction to natural sciences			
Module abbreviation:	IPM-TheoretPracticIntroNaturScien	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Weiherer, Stefan		
Lecturers:	Nelkenbrecher, Claudia; Weiherer, Stefan		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Theoretical and practical introduction to natural sciences (IPM-TheoretPracticIntroNaturScien)		
Lecture types:	1: SU/Pr - seminaristischer Unterricht/Praktikum		
Examinations:	written exam, 90 minutes (IPM-TheoretPracticIntroNaturScien)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
To be determined			
Content:			
To be determined			
Literature:			
Will be specified at the beginning			

2.3 Elective Modules

Business English - Advanced Writing and Cultural Studies			
Module abbreviation:	IPM-BusinEnglAdvanWritCultStud	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	McIntosh, Sabine		
Lecturers:	McIntosh, Sabine		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		24 h
	Self-study:		126 h
	Total:		150 h
Subjects of the module:	Business English - Advanced Writing and Cultural Studies (IPM-BusinEnglAdvanWritCultStud)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 90 minutes (IPM-BusinEnglAdvanWritCultStud)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
English knowledge according to the European Frame of Reference level B2/C1; Students of Business Administration should have passed Written and Oral Communication Skills			
Objectives:			
Professional and methodological competence			
<ul style="list-style-type: none"> Acquisition of the ability to work in an international/English-speaking company by consolidating technical terminology 			
Operational competence			
<ul style="list-style-type: none"> Consolidation of written and oral communicative competence in the foreign language 			
Social competence			
Ability to integrate in international companies by acquiring in-depth language skills and knowledge of intercultural aspects.			
Content:			
<ul style="list-style-type: none"> Analysis and discussion of texts dealing with the economic sector or cultural aspects Superior understanding of the writing process and writing techniques (memos, reports, minutes etc.) Stylistic elements of text production and creative writing with special regard to sentence structure and punctuation Analysis and evaluation of differences in intercultural communication 			

- Who are we - cultural backgrounds, attitudes and values
- Identifying the challenges faced by people working in an intercultural environment
- Dimensions of culture: some models

Literature:

Will be specified at the beginning

Business English - Oral Communication Skills			
Module abbreviation:	IPM-BusEnglOralComSkills	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	McIntosh, Sabine		
Lecturers:	McIntosh, Sabine; Zürn, Martina		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		48 h
	Self-study:		102 h
	Total:		150 h
Subjects of the module:	Business English - Oral Communication Skills (IPM-BusEnglOralComSkills)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	oral exam, 15 minutes (IPM-BusEnglOralComSkills)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan.			
Recommended prerequisites:			
Students of Business Administration should have passed Written Communication Skills			
Objectives:			
Professional and methodological competence:			
<ul style="list-style-type: none"> Ability to speak fluently in English using appropriate grammar, vocabulary and pronunciation on an intermediate to advanced level 			
Operational Competence:			
<ul style="list-style-type: none"> Ability to use spoken English in a business and international context 			
Social Competence			
<ul style="list-style-type: none"> Understanding of intercultural aspects 			
Content:			
In this course, students will improve their proficiency, accuracy and vocabulary in spoken English and improve their listening skills.			
<ul style="list-style-type: none"> Introduction into regional and cultural aspects of English speaking countries with special emphasis on intercultural aspects and behaviour Improvement of English language functions such as requesting, greeting, clarifying, apologizing, inviting and so on in business situations (face to face) Organizing or running a debate or discussion and stating one's own opinion in business situations (meetings) 			

- Ability to understand difficult and complex subjects and to rephrase them (telephoning)
- Making and delivering a presentation
- Interpreting and explaining graphs and charts

Literature:

Will be specified at the beginning

Business English - Written Communication Skills			
Module abbreviation:	IPM-BusEnglWrittComSkills	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	McIntosh, Sabine		
Lecturers:	Gilg, Andrea		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		48 h
	Self-study:		102 h
	Total:		150 h
Subjects of the module:	Business English - Written Communication Skills (IPM-BusEnglWrittComSkills)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 90 minutes (IPM-BusEnglWrittComSkills)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
English knowledge according to the European Frame of Reference level B2/C1			
Objectives:			
Professional and methodological competence			
<ul style="list-style-type: none"> Acquirement of intermediate to advanced skills in written interaction using appropriate terminology and expressions in business contexts. 			
Operational competence			
<ul style="list-style-type: none"> Ability to use the English language in relation to a specialized and professional context in an international environment. 			
Social competence			
<ul style="list-style-type: none"> Awareness of intercultural differences and diversity 			
Content:			
<ul style="list-style-type: none"> Repetition and consolidation of grammatical knowledge and emphasis on syntactical structures Expansion of basic language skills and proficiency Analysis and discussion of specially selected authentic articles from magazines, newspapers and textbooks Expansion of language skills with regard to specific and general business situations 			

- Individual writing of texts with a focus on business and economic topics on the one hand and on the requirements of later professional life on the other hand. Writing business letters in English is a major objective of this class.
- Knowledge of the internationally used terminology (INCOTERMS)

Literature:

- WESSELS, Dieter, 2004. *Commercial Correspondence - Advanced Commercial Correspondence - B2/C1*. Berlin: Cornelsen. ISBN 978-3-464-02790-5

Business Excellence			
Module abbreviation:	IPM-BusinessExcellence	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Kaiser, Norbert		
Lecturers:	Kaiser, Norbert		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 2 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Business Excellence (IPM-BusinessExcellence)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	seminar paper and presentation (IPM-BusinessExcellence)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
<p>Knowledge: Students are becoming familiar with success factor analysis and the EFQM Excellence Model as a success factor based framework for corporate management. They understand model criteria and criterion parts for a systematic corporate development, identify cause and effect chains by using Key Performance Indicators (KPI) and are getting acquainted with EFQM's Business Excellence concepts. Benchmarking and Self-Assessment are focused as kick-off concepts for corporate change.</p> <p>Professional Skills: Students are able to get a holistic view of an organization by using the EFQM Excellence Model. They are able to identify the drivers for an organization's future success, how approaches are deployed and results are measured by appropriate key performance indicators. Students learn how to assess an organization by using the EFQM Excellence Model. They have the skills for using the lecture as a drive-up ramp for EFQM's licensed assessor trainings.</p> <p>Social Skills: The students are able to discuss case study results in groups, achieve consensus by critical but constructive discussions and present final work results as a team in their research study project.</p>			
Content:			
<ul style="list-style-type: none"> ● Introduction to Success Factor Research and Success Factor Analysis, ● EFQM Excellence Model - Model Development, Criteria, Criterion Parts, ● Fundamental Concepts of Excellence and RADAR® Methodology (Overview), 			

- Case Study - Good Practice Analysis and Presentation,
- Self-Assessment und Change Management,
Benchmarking - Methodology and Practical Case Study.

Literature:

- Without author. *EFQM Publications* [online]. Brussels: EFQM [Accessed on:]. Available via: <https://www.efqm.org/>

Business German - Oral Communication Skills			
Module abbreviation:	IPM-BusinGermOralCommunSkil	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Zürn, Martina		
Lecturers:	Junek, Teresa		
Language of instruction:	German		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Business German - Oral Communication Skills (IPM-BusinGermOralCommunSkil)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	oral exam, 15 minutes (electronic remote exam § 2 Abs. 3 BayFEV) (IPM-BusinGermOralCommunSkil)		
	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
Students of Business Administration should have passed Written Communication Skills			
Objectives:			
Knowledge:			
<ul style="list-style-type: none"> ● Professional and methodological competence, ● Improvement of the lexical and grammatical knowledge of the German language 			
Professional Skills:			
<ul style="list-style-type: none"> ● To be able to meet the requirements in one's studies, everyday life and business in writing as well as orally 			
Soft Skills:			
To be able to take part in student life, business and spare time activities			
Content:			
<ul style="list-style-type: none"> ● Relevant oral skills in difficult everyday situations, study and business ● Improvement of articulation and intonation, use of non-verbal and para-verbal skills ● Detailed knowledge in the correct use of prepositions ● Clarification of verbal structures, verbs with prefixes ● Business letters 			

Oral presentations

Literature:

- FÖLDEAK, H., 2001. *Sags besser! Arbeitsbuch für Fortgeschrittene Teil 2*. ISBN 978-3190074549
- HALL, K. and B. SCHEINER, 2001. *Übungsgrammatik Deutsch als Fremdsprache für Fortgeschritten* . 1. edition. Ismaningen: Hueber / Verlag für Deutsch. ISBN 9783190074488

Business German - Written Communication Skills			
Module abbreviation:	IPM-BusinGermWrittCommunSkil	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Zürn, Martina		
Lecturers:	Schmidt, Budimir		
Language of instruction:	German		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Business German - Written Communication Skills (IPM-BusinGermWrittCommunSkil)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 90 minutes (IPM-BusinGermWrittCommunSkil)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
<p>Knowledge: Competence in subject and methodology: Ability to activate, reinforce and enhance vocabulary and grammar knowledge of the German language</p> <p>Professional Skills: To be able to meet oral and written standards needed for successful participation in academic courses taught in German</p> <p>Social Skills: Ability to better integrate in day-to-day activities of student life as well as recreation</p>			
Content:			
<ul style="list-style-type: none"> ● Listening comprehension of advanced audio and video material covering current events in economy, technology, politics, culture and civilization; oral and written reproduction, summaries or reports are required ● Ability to answer questions and complete tasks based on advanced texts, interpretation of graphs, production of conclusions or summaries, writing reports ● Knowledge of noun-verb complements and ability to produce and transform temporal, causal, conditional, concessive, final and modal relations ● Linguistic preparation of presentations and papers 			

Literature:

- FÖLDEAK, Hans, . *Sag`s besser! Arbeitsbuch für Fortgeschrittene Teil 1*. 2. edition. Ismaningen: Hueber Verlag. ISBN 978-3-19-007453-2
- DREYER, and SCHMITT, . *Lehr- und Übungsbuch der deutschen Grammatik*. 1. edition. Ismaningen: Hueber Verlag. ISBN 978-3193072559

Business Model Innovation and Digitalisation			
Module abbreviation:	IPM-BusinModellInnovDigitalis	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Kögel, Dominik		
Lecturers:	Kögel, Dominik		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Business Model Innovation and Digitalisation (IPM-BusinModellInnovDigitalis)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	seminar paper and presentation (IPM-BusinModellInnovDigitalis)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
To be determined			
Content:			
To be determined			
Literature:			
Will be specified at the beginning			

Business Spanish - Oral Communication Skills			
Module abbreviation:	IPM-BusinSpanOralCommunSkil	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Gebhard, Christian		
Lecturers:	Gebhard, Christian		
Language of instruction:	Spanish		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Business Spanish - Oral Communication Skills (IPM-BusinSpanOralCommunSkil)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	oral exam, 15 minutes (IPM-BusinSpanOralCommunSkil)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
Qualification aims:			
<ul style="list-style-type: none"> ● Gaining fluency in oral communication in business contexts on an intermediate to advanced level ● Using Spanish appropriately in given business related contexts ● Consolidation of intercultural competence 			
Knowledge:			
<ul style="list-style-type: none"> ● Students know technical vocabulary for oral communication for business purposes (presentations, telephone conversations, etc.) ● Students know grammar structures of the Spanish language as indicated below ● Students gain an insight into business structures and financial issues of the Spanish speaking world 			
Professional skills:			
<ul style="list-style-type: none"> ● Students apply their knowledge about Spanish speaking countries in formal situations ● Students establish business contacts in the Spanish speaking world 			
Social skills:			
<ul style="list-style-type: none"> ● Students understand and apply the communication style of Spanish speaking cultures ● Students work together in small groups 			

Content:

- Consolidation and broadening of grammatical structures
- Practicing oral communication in business contexts with a special focus on strategies and behavior for discussions, presentations and phone calls, both alone and in teams
- Business subjects will be treated highlighting their cultural specificities on the background of a particular Spanish speaking country
- Practicing fluent and appropriate oral expressions of summarizing and describing complex facts and circumstances and expressing one's personal opinion

Literature:

Teaching Material:

- Script

Recommended:

- Meta profesional. B1.
 - .1 Kursbuch + Audio-CD: 978-3-12-515470-4
 - .2 Übungsbuch + Audio-CD: 978-3-12-515471-1
- Tano, Marcelo (2009): Expertos. Curso avanzado de español orientado al mundo del trabajo. Difusión/Klett.
 - .1 Libro del alumno + Audio-CD + DVD: 978-3-12-515595-4 (3-12-515595-9)
 - .2 Cuaderno de ejercicios + Audio-CD: 978-3-12-515596-1
- Abegg, Birgit / Martínez Cestero, Antonio (2006): Comunicación empresarial. Hueber.
 - .1 Students' book: 978-3-19-004030-8
 - .2 Audio-CD: 978-3-19-034030-9

Additional material will be distributed via the web-based learning platform ILIAS.

Business Spanish - Written Communication Skills			
Module abbreviation:	IPM-BusinSpanWrittCommunSkil	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Gebhard, Christian		
Lecturers:	Gebhard, Christian		
Language of instruction:	Spanish		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Business Spanish - Written Communication Skills (IPM-BusinSpanWrittCommunSkil)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 90 minutes (multiple choice § 8 c APO) (IPM-BusinSpanWrittCommunSkil)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
Knowledge:			
<ul style="list-style-type: none"> ● Students know technical vocabulary for written communication for business purposes (letters, newspaper articles, applications, etc.) ● Students know grammar structures of the Spanish language as indicated below ● Students gain an insight into business structures and financial issues of the Spanish speaking world 			
Professional Skills:			
<ul style="list-style-type: none"> ● Students apply their knowledge about Spanish speaking countries in formal situations ● Students establish business contacts in the Spanish speaking world 			
Social Skills:			
<ul style="list-style-type: none"> ● Students understand and apply the communication style of Spanish speaking cultures 			
Students work together in small groups			

Content:

- Practicing different strategies for handling and understanding economic texts from course books, journals, the business section of papers and economic publications of governmental institutions or trade organisations
- Debate and written discussion of articles related to business topics from the press
- Composition of simple short essays, summaries and comments on business topics
- Revision and consolidation of grammar structures
- Two topics related to national economics will be treated in class
- The Modules Business Spanish 1 - Written Communication Skills and Business Spanish 2 - Oral Communication Skills should enable the student to communicate in business contexts using the appropriate language.

Business Spanish 1 - Oral Communication Skills is focused on the written language and economic contexts.

Literature:

- , 2015. *Meta profesional B1: Spanisch für den Beruf. Kursbuch + Audio-CD (Meta profesional: Spanisch für den Beruf)*. ISBN 978-3125154704
- ABEGG , Birgit and Antonio Martínez CESTERO, 2005. *Comunicación empresarial: Spanische Handelskorrespondenz für die Berufspraxis / Kursbuch*. ISBN 978-3190040308
- ABEGG , Birgit and Antonio Martínez CESTERO, . *Comunicación empresarial Spanische Handelskorrespondenz für die Berufspraxis / Audio-CD*. ISBN 978-3-19-034030-9
- TANO, Marcelo, 2009. *Expertos. Curso avanzado de español orientado al mundo del trabajo (Libro del alumno+Audio CD)*. ISBN 978-3-12-515595-4
- TANO, Marcelo, 2010. *Expertos. Curso avanzado de español orientado al mundo del trabajo. Cuaderno de ejercicios + Audio-CD*. ISBN 978-3-12-515596-1

Cross-cultural Management and Communication			
Module abbreviation:	IPM-CrossCulturMgmtComm	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Schugk, Michael		
Lecturers:	Schugk, Michael		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Cross-cultural Management and Communication (IPM-CrossCulturMgmtComm)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 90 minutes and seminar paper (IPM-CrossCulturMgmtComm)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
Knowledge:			
<ul style="list-style-type: none"> ● Knowledge of extensive theoretical basics for identification of intercultural differences and management practices 			
Professional Skills:			
<ul style="list-style-type: none"> ● Capability to select situation specifically the relevant theoretical basics for different situations in business practice ● Capability to apply situation specifically the relevant theoretical basics in the field of cross-cultural management for problem-solving 			
Social Skills:			
<ul style="list-style-type: none"> ● Development of intercultural (communication) competence 			
Content:			
<ul style="list-style-type: none"> • Definition and models in regard to the culture term • Intercultural manifestations and instruments for interpersonal intercultural communication • Culture-comparing studies according to Kluckhohn and Strodtbeck, Hall, Hofstede, Trompenaars and House • Cultural neuroscience 			

- Intercultural communication psychology

Literature:

- BROWAEYS, Marie-Joëlle and Roger PRICE, 2011. *Understanding cross-cultural management*. 2. edition. Harlow ; Munich [u.a.]: Prentice Hall. ISBN 978-0-273-73295-2

Data science and empirical research in business and economics			
Module abbreviation:	Data science and empirical re- search	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Dauth, Christine		
Lecturers:	Dauth, Christine		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		52 h
	Self-study:		98 h
	Total:		150 h
Subjects of the module:	Data science and empirical research in business and economics (Data science and empirical research)		
Lecture types:	1: SU - seminaristischer Unterricht/Übung		
Examinations:	seminar paper (Data science and empirical research)		
	Prerequisite for the granting of credit points is the passing of the respective module examination in accordance with the SPO resp. study plan.		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
Basic statistics			
Objectives:			
<p>Expertise and methodological skills:</p> <p>Students become familiar with different data types and with one data set, the Linked Personnel Panel, in particular. They learn how to handle the programming language R in order to conduct basic descriptive analyses. They learn how to write and structure an empirical research paper and know the major guidelines of academic writing.</p> <p>Practical skills:</p> <p>This course enables students to conduct basic data analyses. They can critically assess the validity of other empirical results that they are confronted with in corporate environments and can distinguish between correlation and causation. They will create value-added for firms with their ability to familiarize themselves quickly with new complex tasks, sort information, and comprehensively visualize and present results. In the short run, this course prepares the students to write an (empirical) master thesis and makes them more attractive for firms who look for interns or employees. In the medium run, this course is a good preparation for continuing courses in data analysis, and in the long run, this course prepares students for a career in data science-related jobs.</p> <p>Social skills:</p> <p>Working in groups, students practice their communication and team working skills. They learn to self-organize their workload and train their skills in time management to successfully and jointly finish the project. This will improve their self-esteem.</p>			

Content:

The progressing digitization implies that institutions and firms collect more and more data, for example, on production processes, employees, and customers. Firms can use these data to better forecast business developments or to analyze the impact of management decisions.

In this practical course, students learn hands-on how to handle and exploit real data in order to answer business-related problems. The students apply basic statistical methods and the programming language R and learn to distinguish between correlation and causality. Moreover, students learn how to visualize, document, and present the results of their data analysis comprehensively in a structured research paper.

The course comprises lectures and practical sessions. Moreover, groups of students analyze data themselves to answer a given research question. Grading is based on a five page thesis (excluding tables and figures) that summarizes the results of the group work.

The major outline of the course :

- Why conduct empirical research?
- Introduction to the Linked Personnel Panel (LPP) and the programming language R
- Dealing with complex data (data management, data preparation, data analysis)
- Structuring a research paper/thesis
- Tips for academic writing

Literature:

- KRONTHALER, Franz and Silke ZÖLLNER, 2021. *Data analysis with RStudio: an easygoing introduction*. Berlin, Germany: Springer Spektrum. ISBN 978-3-662-62517-0, 3-662-62517-2

E-Business			
Module abbreviation:	IPM-EBusiness	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Knüpfper, Wolf		
Lecturers:	Knüpfper, Wolf		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 2 SWS		
Workload:	Contact hours:		23 h
	Self-study:		127 h
	Total:		150 h
Subjects of the module:	E-Business (IPM-EBusiness)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 90 minutes (IPM-EBusiness)		
	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
<p>Knowledge: The students know about the potentials and limits of e-business. They are familiar with the economic effects in the "new economy" and the basic structure business models in e-business and they have basic knowledge of methods to manage e-business projects.</p> <p>Professional Skills: The students are able to evaluate the business models of existing offerings on the internet and they can develop concepts of sustainable e-business solutions. They are familiar with the tasks and problems that have to be solved in order to implement and operate such solutions.</p> <p>Social Skills: The students are familiar with the most important impacts of e-business on society. They understand the interdisciplinary problems within e-business project teams and know approaches to handle them.</p>			
Content:			
<ul style="list-style-type: none"> ● Introduction to e-business (definition and potential, most important current developments), ● Impacts of e-business on society and vice versa, ● Evaluation and development of business models for e-business, ● Characteristics and management of e-business projects, ● Specific problems of the implementation and the operation of e-business systems. 			

Literature:

- CHAFFEY, Dave, 2009. *E-business and e-commerce management: strategy, implementation and practice*. 4. edition. Harlow [u.a.]: FT Prentice Hall. ISBN 978-0-273-71960-1 (pbk.), 0-273-71960-2 (pbk.)
- TURBAN, Efraim, 2010. *Electronic commerce 2010: a managerial perspective*. 6. edition. Boston ; Munich u.a.: Pearson. ISBN 978-0-13-703465-9, 0-13-703465-2

English for Specific Purposes			
Module abbreviation:	English f. specific purposes	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	McIntosh, Sabine		
Lecturers:	McIntosh, Sabine		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		30 h
	Self-study:		120 h
	Total:		150 h
Subjects of the module:	English for Specific Purposes (English f. specific purposes)		
Lecture types:	1: Tuition in Seminars		
Examinations:	seminar paper and presentation (English f. specific purposes)		
	None		
Prerequisites according examination regulation:			
Requirements for the award of credit points are the passing of the respective module examination according to the study and examination regulations and the study plan.			
Recommended prerequisites:			
English knowledge according to the European Frame of Reference level B2/C1			
Objectives:			
Professional and methodological competence:			
Students deepen existing language knowledge in a specific subject area and expand their knowledge of specific terminology.			
Students apply existing subject knowledge and competences from the two other fields of study (business and culture) in the foreign language.			
Students independently access information via the Internet.			
Students describe and evaluate strategies and concepts from the chosen subject area, orally or in writing, depending on the task.			
They further develop existing meeting strategies, expand their subject-related techniques for discussion, moderation and presentation and improve their negotiation skills with special consideration of intercultural relations and intercultural communication.			
Personal competence:			
Students reflect on the goals they have reached and design the necessary processes independently and sustainably.			
Social competence:			

Students engage responsibly and in a collegial manner in the team and solve problems and tasks together and with foresight.

They explain complex topics in an understandable and correct way, argue their point of view and develop it further with their peers.

Students give their fellow students appreciative feedback within the framework of their presentation

They describe and evaluate strategies and concepts from the chosen topic area, orally or in writing, depending on the assignment.

Operational competence:

The students design the processes necessary for the development of the subject area in a goal-oriented and efficient way, taking into account the team constellation as well as their own goals, and use the necessary linguistic means correctly.

They design their texts in the target language in an inclusive, fair and gender-neutral way.

Specific competence:

Intercultural competence:

Students are aware of the cultural diversity in modern companies and the need for special consideration of intercultural relations and intercultural communication in everyday professional life.

Language competence:

Students have a competent command of appropriate specialised language.

Digital competences:

Students use electronic tools to organise their group work, to communicate in the target language and to create presentations, posters, etc.

Content:

The module teaches context-related specialist language from a professionally relevant thematic target area at level B2/C1. The target area can vary depending on the students' interests.

The module introduces the conventions of subject-oriented communication in a global context. Students determine and apply specialised language, which they will use in their future professional environment.

They develop strategies to promote effective addressee-specific specialised language competence. These are either specific skills (e.g. creating a professional application portfolio) or appropriate specialised language register, e.g. for the chosen focus.

Subject areas may include:

Job Application / Recruitment / Human Resources

Hospitality and Tourism

Accounting and Finance / International Trade

Marketing / International Management / Working Across Cultures

Literature:

Will be specified at the beginning

German 1 as a Foreign Language (beginners)			
Module abbreviation:	IPM-Germ1ForeignLanguaBegin	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Zürn, Martina		
Lecturers:	Wittmann, Dimitra		
Language of instruction:	German		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	German 1 as a Foreign Language (beginners) (IPM-Germ1ForeignLanguaBegin)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	seminar paper (IPM-Germ1ForeignLanguaBegin)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
<p>Knowledge: The students have command of the basic principles of the German language so that they can interact in a simple way successfully. Students can ask and answer simple questions (eg for the way, time, library matters, lunch in university canteen etc.), initiate and respond to simple statements in areas of immediate need or on very familiar topics. Students can discuss everyday practical issues in a simple way e.g. what to do, where to go and make arrangements to meet. Students learn understand everyday expressions aimed at the satisfaction of simple needs of a concrete type. Furthermore the students become familiar with cultural specifications of Germany.</p> <p>Professional Skills: Reception and production strategies are employed constantly during interaction. Students can recognize familiar names and words and very basic phrases on simple notices in the most common everyday situations. The Students can get an idea of the content of simpler informational material and short descriptions. Students can understand phrases and the highest frequency vocabulary related to areas of most immediate relevance eg. shopping, local area, employment, university issues. Students can catch the main points in short, clear messages and announcements which is essential eg. for travelling etc.</p>			
Content:			
It is the subject of the course to offer exchange students the chance to communicate easily and interculturallly adequate in a German environment and continually advance their language competences in order to deal with different subjects in different situations and scenarios in Germany effectively.			

Literature:

Will be specified at the beginning

German 2 as a Foreign Language (intermediate)			
Module abbreviation:	IPM-Germ2ForeignLanguaInterm	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Zürn, Martina		
Lecturers:	Wittmann, Dimitra		
Language of instruction:	German		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	German 2 as a Foreign Language (intermediate) (IPM-Germ2ForeignLanguaInterm)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	seminar paper (IPM-Germ2ForeignLanguaInterm)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
<p>Knowledge: The students can understand main points of clear standard of familiar matters regularly encountered at university and areas linked (internship) etc., they can make arrangements and understand topics of personal or professional interest. They can enter unprepared into conversation on topics that are familiar, of personal interest or pertinent to everyday life. The students can deal with most situations likely to arise whilst travelling in an area where the language is spoken.</p> <p>Professional Skills: The students can understand texts that consist mainly of high frequency everyday or job-related language. Reception and production strategies are employed constantly during interaction. They can describe experiences, events and ambitions which are university- and job-related issues (concerning internship). They can communicate with colleagues at their internships in an adequate way if communication is based on topics which are familiar. The students can briefly give reasons and explanations for opinions and plans in an appropriate way (related to B1-level). Furthermore, the students become familiar with cultural specifications of Germany especially related to professional environments.</p>			
Content:			
It is the subject of the course to offer exchange students the chance to communicate easily and intercultur-ally adequate in a German environment and continually advance their language competences in order to deal with different subjects in different situations and scenarios in Germany effectively. On an adequate level according to level B1.			

Literature:

- MITTLER, Alexandra, 2012. *DaF kompakt A1-B1 Grammatik: Deutsch als Fremdsprache für Erwachsene*. 1. edition. Stuttgart: Klett. ISBN 978-3-12-676193-2

Global Marketing			
Module abbreviation:	IPM-Global_Marketing	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Schugk, Michael		
Lecturers:	Schugk, Michael		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Global Marketing (IPM-Global_Marketing)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 90 minutes (IPM-Global_Marketing)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
Knowledge:			
<ul style="list-style-type: none"> • Competence and applicability in the learned theoretical contents with an orientation towards problems which arrive when coordinating • The ability to use one's learned problem solving skills in all parts of International Marketing 			
Professional Skills:			
<ul style="list-style-type: none"> • Complete overview over the approach towards International Marketing according to Backhaus et al • Expertise in Going international and Being international as fundamental topics of International Marketing • Understanding of the special features of International Marketing 			
Soft Skills:			
<ul style="list-style-type: none"> • Recognition of international and intercultural differences • Development of soft skills in an international context 			
Content:			
Going international:			
<ul style="list-style-type: none"> • Problem of coordination concerning International Marketing • Evaluation and selection of markets 			

- Strategies for market entry

Being international:

- Problem of coordination on markets growing together
- Coordination strategies on markets growing together
- Strategies for market entry
- Coordination demand covering strategies
- Coordination demand reducing strategies

Literature:

- BACKHAUS, Klaus, Joachim BÜSCHKEN and Markus VOETH, 2006. *International marketing*. [. edition. Houndmills, Basingstoke [u.a.]: Palgrave Macmillan. ISBN 978-0-333-96388-3

International Financial Management			
Module abbreviation:	IPM-InternFinanciManagem	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Schwindler, Oliver		
Lecturers:	Schwindler, Oliver		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 2 SWS		
Workload:	Contact hours:		22 h
	Self-study:		128 h
	Total:		150 h
Subjects of the module:	International Financial Management (IPM-InternFinanciManagem)		
Lecture types:	SU - tuition in seminars (IPM-InternFinanciManagem)		
Examinations:	written exam, 90 minutes and seminar paper (IPM-InternFinanciManagem)		
	None		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
To be determined			
Content:			
To be determined			
Literature:			
Will be specified at the beginning			

Introduction to Quality Management			
Module abbreviation:	IPM - Introduction to Quality Management	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Hedderich, Barbara		
Lecturers:	Wilisch, Christian		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 3 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Introduction to Quality Management (IPM - Introduction to Quality Management)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	seminar paper and presentation (IPM - Introduction to Quality Management) The requirements for the award of credit points are the passing of the respective module examination according to the SPO or the curriculum.		
Prerequisites according examination regulation:			
None			
Recommended prerequisites:			
None			
Objectives:			
Quality management (QM) is an indispensable tool not only in production environments but in all aspects of commerce.			
Content:			
<ul style="list-style-type: none"> • What is 'quality'? • Historical context of quality management • Financial aspects of quality management • Quality techniques and their applications • Process control techniques • Critical assessment of QM approaches 			
Literature:			
<ul style="list-style-type: none"> • IMAI, Masaaki, 2012. <i>Gemba kaizen: a commonsense approach to a continuous improvement strategy</i>. 2. edition. New York, NY [u.a.]: McGraw Hill. ISBN 0-07-179035-7, 978-0-07-179035-2 			

- CHALKIADAKIS, Ioannis , 2019. *New Product Development with the use of Quality Function*. ISBN 978-3330344181
- MONTGOMERY, Douglas C., 2019. *Introduction to statistical quality control*. E. edition. Hoboken, NJ: Wiley. ISBN 978-1-119-65711-8, 978-1-118-98915-9

Lean Production - Manufacturing Excellence			
Module abbreviation:	IPM-LeanProductManufactExcell	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Slama, Stefan		
Lecturers:	Slama, Stefan		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Lean Production - Manufacturing Excellence (IPM-LeanProductManufactExcell)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	seminar paper and presentation (IPM-LeanProductManufactExcell)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
<p>Knowledge: Students are becoming familiar with expert knowledge and scientific concepts and methods in the field of Lean Production and Manufacturing Excellence. They understand the most important aims of production without waste of resources, lean thinking in processes and organization, helpful tools and they will know methods and tasks to solve problems in efficiency.</p> <p>Professional Skills: Students are able to solve tasks autonomous and are able to asses problems in the field of Lean Production</p> <p>Social Skills: The students are able to discuss case study results in groups, achieve consensus by critical but constructive discussions and present final work results as a team, also their research study project</p>			
Content:			
<p>Definition, Meaning, Opportunities, Method Overview and Structure of Lean Production</p> <p>Team Work, 5S, Standards</p> <p>Muda Elimination, TPM (Total Productive Maintenance), JIT (Just In Time)</p> <p>Employee Involvement, Quality First, etc.</p> <p>Strengthening of key aspects with additional trainings and exercises in team-work, critically considerations of effects/needs and presentation of results</p>			

Literature:

Will be specified at the beginning

Project Management			
Module abbreviation:	IPM-ProjectManagement	Reg.no.:	
Curriculum:	Programme	Module type	Semester
	International Product and Service Management (SPO WS 16/17)		1
Responsible for module:	Slama, Stefan		
Lecturers:	Slama, Stefan		
Language of instruction:	English		
Credit points / SWS:	5 ECTS / 4 SWS		
Workload:	Contact hours:		45 h
	Self-study:		105 h
	Total:		150 h
Subjects of the module:	Project Management (IPM-ProjectManagement)		
Lecture types:	1: SU - seminaristischer Unterricht		
Examinations:	written exam, 120 minutes, and seminar paper (IPM-ProjectManagement)		
	None		
Prerequisites according examination regulation:			
According to the study and examination regulations and the study plan			
Recommended prerequisites:			
None			
Objectives:			
To be determined			
Content:			
To be determined			
Literature:			
Will be specified at the beginning			