

**Course Catalogue**

**Modules taught in English**

Bachelor’s and Master’s programs

Language courses



Last updated: March 2024

Contents

[1 Introduction 9](#_Toc160446845)

[2 Important contacts 10](#_Toc160446846)

[3 Our study programs at a glance 11](#_Toc160446847)

[4 Education system at Hof UAS 13](#_Toc160446848)

[5 Academic calendar 14](#_Toc160446849)

[6 Abbreviations and terms 14](#_Toc160446850)

[7 Course selection at Hof University 15](#_Toc160446851)

[8 About our English-taught courses 16](#_Toc160446852)

[9 Business Department 17](#_Toc160446853)

[9.1 Area of specialization: Marketing 19](#_Toc160446854)

[9.1.1 Strategic and International Marketing 19](#_Toc160446855)

[9.1.2 Digital Commerce and Digital Marketing 20](#_Toc160446856)

[9.1.3 Principles of Marketing 21](#_Toc160446857)

[9.1.4 Industrial Marketing Management 22](#_Toc160446858)

[9.1.5 Applied Marketing Research 23](#_Toc160446859)

[9.1.6 Marketing Communications 24](#_Toc160446860)

[9.1.7 Global Sales and Key Account Management 25](#_Toc160446861)

[9.1.8 Market Research 26](#_Toc160446862)

[9.2 Area of specialization: Finance / Accounting 27](#_Toc160446863)

[9.2.1 Financial Reporting 27](#_Toc160446864)

[9.2.2 International Tax 28](#_Toc160446865)

[9.2.3 Fundamentals of Corporate Finance 29](#_Toc160446866)

[9.2.4 Finance & Accounting in a Multinational Business 30](#_Toc160446867)

[9.3 Area of specialization: Human Resource Management 31](#_Toc160446868)

[9.3.1 Human Resource Management and Organization 31](#_Toc160446869)

[9.3.2 Human Resources Development 33](#_Toc160446870)

[9.3.3 Leadership 34](#_Toc160446871)

[9.3.4 Case Studies in HRM 35](#_Toc160446872)

[9.3.5 Managing Human Resources 36](#_Toc160446873)

[9.3.6 International Human Resources Management 37](#_Toc160446874)

[9.4 Area of specialization: General Management 39](#_Toc160446875)

[9.4.1 Introduction to Digital Business 39](#_Toc160446876)

[9.4.2 International Business Management 41](#_Toc160446877)

[9.4.3 Project Management 43](#_Toc160446878)

[9.4.4 International Strategies 44](#_Toc160446879)

[9.4.5 ERP Simulation 46](#_Toc160446880)

[9.4.6 Corporate Social Responsibility 47](#_Toc160446881)

[9.4.7 Global Business Strategy 48](#_Toc160446882)

[9.4.8 Facts about Germany 49](#_Toc160446883)

[9.4.9 Process Management 50](#_Toc160446884)

[9.4.10 Business Process Management 52](#_Toc160446885)

[9.5 Area of specialization: Law 53](#_Toc160446886)

[9.5.1 Introduction to Legal English 53](#_Toc160446887)

[9.5.2 Introduction to Chinese Law 54](#_Toc160446888)

[9.5.3 International Contracts 55](#_Toc160446889)

[9.5.4 Legal Framework for Global Management 56](#_Toc160446890)

[9.6 Area of specialization: Economics 57](#_Toc160446891)

[9.6.1 Principles of Economics 57](#_Toc160446892)

[9.6.2 International Economic Policy 59](#_Toc160446893)

[9.6.3 Digital Economics 61](#_Toc160446894)

[9.7 Area of specialization: Logistics 62](#_Toc160446895)

[9.7.1 Introduction to Procurement-, Production- and Logistics-Management 62](#_Toc160446896)

[9.7.2 Digital Production, Logistics and Supply Chain 64](#_Toc160446897)

[9.7.3 Supply Chain Management 65](#_Toc160446898)

[9.7.4 Procurement Management 66](#_Toc160446899)

[9.7.5 Operational Excellence & Innovation Management 67](#_Toc160446900)

[9.7.6 International Value Chain Management 69](#_Toc160446901)

[9.8 Area of specialization: Electives - Business 70](#_Toc160446902)

[9.8.1 Crosscultural Communication and Presentation Skills 70](#_Toc160446903)

[9.8.2 Crosscultural Competence 72](#_Toc160446904)

[9.8.3 Business Communication 73](#_Toc160446905)

[9.8.4 International Communication and Project Management 74](#_Toc160446906)

[9.8.5 International Negotiating Skills 75](#_Toc160446907)

[9.8.6 Anglo-American Negotiations 77](#_Toc160446908)

[10 Engineering Department 78](#_Toc160446909)

[10.1 Industrial Engineering International 81](#_Toc160446910)

[10.1.1 Applied Engineering Project 81](#_Toc160446911)

[10.2 Innovative Textiles (B.Eng.) 82](#_Toc160446912)

[10.2.1 Computational Science for Practitioners 82](#_Toc160446913)

[*10.2.2* *Sales Communication* 83](#_Toc160446914)

[*10.2.3* *Analytical Chemistry* 84](#_Toc160446915)

[10.2.4 Knitting Technology 85](#_Toc160446916)

[10.2.5 Quality Management 86](#_Toc160446917)

[10.2.6 Spinning Technology 87](#_Toc160446918)

[10.2.7 Advanced Coloration 87](#_Toc160446919)

[10.2.8 Future in Textile Printing 88](#_Toc160446920)

[10.2.9 Project Textile 88](#_Toc160446921)

[10.2.10 Research in textile sector 89](#_Toc160446922)

[10.2.11 Technical Textiles – Knitted Fabrics 90](#_Toc160446923)

[10.2.12 Textile Chemistry 91](#_Toc160446924)

[10.2.13 Textile Finishing 92](#_Toc160446925)

[10.2.14 Coating technologies for thin films 93](#_Toc160446926)

[*10.2.15* *Basics of Materials Science* 94](#_Toc160446927)

[*10.2.16* *Project Management* 95](#_Toc160446928)

[*10.2.17* *Product Development* 96](#_Toc160446929)

[10.2.18 Technical studies for knitted and woven structures 97](#_Toc160446930)

[10.2.19 Technology of nonwoven manufacturing 98](#_Toc160446931)

[10.2.20 Weaving Technology 99](#_Toc160446932)

[10.2.21 Technical Textiles – Woven Fabrics 100](#_Toc160446933)

[10.2.22 Textile Composite Materials 101](#_Toc160446934)

[10.2.23 Textile Coating and Industrial Fibres 102](#_Toc160446935)

[*10.2.24* *Conditioning of Polymer Surfaces (block course)* 103](#_Toc160446936)

[10.2.25 Circular Economy and Ressource Management 104](#_Toc160446937)

[10.3 Textile Design (B.A.) 105](#_Toc160446938)

[10.3.1 Design Project 105](#_Toc160446939)

[10.3.2 Product Design 2 International 106](#_Toc160446940)

[10.3.3 Weave Product Design 107](#_Toc160446941)

[10.3.4 Print Product Design 108](#_Toc160446942)

[10.3.5 Print Technology 109](#_Toc160446943)

[10.3.6 Collection Design 110](#_Toc160446944)

[10.3.7 Manufacturing and Cutting Techniques 111](#_Toc160446945)

[*10.3.8* *Digital Textile Systems* 112](#_Toc160446946)

[10.3.9 Textile Future 1 113](#_Toc160446947)

[10.3.10 Experimental 3-Dimensional Design 114](#_Toc160446948)

[10.4 Engineering Sciences 115](#_Toc160446949)

[*10.4.1* *Application-Oriented Programming for Engineers* 115](#_Toc160446950)

[10.4.2 Object-Oriented Programming Techniques 115](#_Toc160446951)

[10.4.3 Chemistry II 116](#_Toc160446952)

[10.4.4 Software Solutions for Engineers 117](#_Toc160446953)

[10.4.5 Entrepreneurship and Change Management 118](#_Toc160446954)

[10.4.6 Project & Case-Studies 119](#_Toc160446955)

[10.4.7 Project Management 120](#_Toc160446956)

[10.4.8 Commercial Project Management 120](#_Toc160446957)

[10.4.9 Hardware-Oriented Robotics 121](#_Toc160446958)

[10.4.10 Fundamentals of technology in civil engineering 122](#_Toc160446959)

[10.4.11 Research Project Industry 4.0 124](#_Toc160446960)

[10.4.12 Computer Science for Engineers 125](#_Toc160446961)

[10.4.13 Investment and Financing 126](#_Toc160446962)

[10.4.14 Modern Methods of Digital Engineering 128](#_Toc160446963)

[10.5 Sustainable Textiles (M.Eng.) 129](#_Toc160446964)

[10.5.1 Effect and Process Auxiliaries 129](#_Toc160446965)

[*10.5.2* *Project Simulation* 130](#_Toc160446966)

[10.5.3 Renewable Products for the Textile Industry 131](#_Toc160446967)

[10.5.4 Resource Efficient Application Technologies 132](#_Toc160446968)

[10.5.5 Sustainable Functionalisation and Surface Modification of Textiles 133](#_Toc160446969)

[10.5.6 Advanced Textile Chemistry 134](#_Toc160446970)

[10.5.7 Advanced Textile Production 135](#_Toc160446971)

[*10.5.8* *Circular Economy / Certificates and Eco Labels* 136](#_Toc160446972)

[*10.5.9* *Sustainable Project Management* 137](#_Toc160446973)

[10.5.10 Simulation and Optimization 138](#_Toc160446974)

[*10.5.11* *Legal Framework and Digitalization of the Textile Value Chain* 139](#_Toc160446975)

[10.6 Sustainable Water Management and Engineering (M.Eng.) 140](#_Toc160446976)

[10.6.1 Smart Water 140](#_Toc160446977)

[10.6.2 Water and Society 141](#_Toc160446978)

[10.6.3 New Technologies in the Water Sector 142](#_Toc160446979)

[*10.6.4* *Project work simulation (Water systems)* 143](#_Toc160446980)

[10.6.5 R&D or Industrial Project 144](#_Toc160446981)

[10.6.6 Advanced Water Treatment 146](#_Toc160446982)

[*10.6.7* *Wastewater Discharge and Sewer network with structures* 147](#_Toc160446983)

[10.6.8 International Water and Risk Management 148](#_Toc160446984)

[*10.6.9* *Sustainability Management* 149](#_Toc160446985)

[10.6.10 Water Quality and Water Cycle 150](#_Toc160446986)

[10.6.11 Risk Management in the Water Sector 151](#_Toc160446987)

[10.6.12 Urban Waste Water Cycle 152](#_Toc160446988)

[10.7 International Project Management 153](#_Toc160446989)

[10.7.1 Integrated Water Ressources Managemet 153](#_Toc160446990)

[11 Department of Computer Science 154](#_Toc160446991)

[11.1 Business Information Systems (B.Sc.) 156](#_Toc160446992)

[11.1.1 Applied Artificial Intelligence 156](#_Toc160446993)

[11.1.2 Advanced Software Engineering 157](#_Toc160446994)

[11.1.3 Data Science 158](#_Toc160446995)

[11.1.4 Interdisciplinary practical course 159](#_Toc160446996)

[11.1.5 Practical Cloud Computing 160](#_Toc160446997)

[11.2 Computer Science/Informatics (B.Sc.) 160](#_Toc160446998)

[11.2.1 CCNA Certification – Online course (3 modules in total) 160](#_Toc160446999)

[11.2.2 CCNA CyberSecurity Operations 165](#_Toc160447000)

[11.2.3 CCNA Network Security 166](#_Toc160447001)

[11.2.4 Applied Machine Learning 167](#_Toc160447002)

[11.2.5 Applied Robotics 168](#_Toc160447003)

[*11.2.6* *Artificial Intelligence in Robotics* 169](#_Toc160447004)

[*11.2.7* *Internet of Things* 170](#_Toc160447005)

[*11.2.8* *Intercultural Competence* 171](#_Toc160447006)

[*11.2.9* *Formal Languages* 172](#_Toc160447007)

[11.2.10 Cloud Computing 173](#_Toc160447008)

[11.2.11 Deep Learning for Natural Language Understanding 175](#_Toc160447009)

[11.2.12 Hypertext and Hypernarratives 176](#_Toc160447010)

[11.2.13 Cooperative Autonomous Systems 177](#_Toc160447011)

[11.3 Computer Science (B.Sc.) 178](#_Toc160447012)

[11.3.1 Fundamentals of Programming 178](#_Toc160447013)

[11.3.2 Mathematics 179](#_Toc160447014)

[11.3.3 Success in Studies (Studying with Success) 180](#_Toc160447015)

[11.3.4 Fundamentals of Information Technology 181](#_Toc160447016)

[11.3.5 Operating Systems 182](#_Toc160447017)

[11.4 Applied Research in Computer Science (M.Sc.) 183](#_Toc160447018)

[11.4.1 Data Mining and Machine Learning 183](#_Toc160447019)

[11.4.2 Behavioral Approaches in Computer Science Research 184](#_Toc160447020)

[11.4.3 Development and Design of Business Models 186](#_Toc160447021)

[11.4.4 HCI Perspectives in Hypertext and Related Topics 187](#_Toc160447022)

[11.4.5 Data Engineering and Analysis 188](#_Toc160447023)

[11.4.6 Information System Security 189](#_Toc160447024)

[11.4.7 New Technologies in Computer Science 190](#_Toc160447025)

[11.4.8 Design Science Approach in Computer Science Research 191](#_Toc160447026)

[11.5 Software Engineering for Industrial Applications (M.Eng.) 192](#_Toc160447027)

[11.5.1 Non-Relational Databases 192](#_Toc160447028)

[11.5.2 Software Engineering 193](#_Toc160447029)

[11.5.3 Mobile Computing 194](#_Toc160447030)

[*11.5.4* *Concepts and Tools of Application Development* 195](#_Toc160447031)

[11.5.5 Component-Oriented Software Development 196](#_Toc160447032)

[11.5.6 Applied Cloud Computing 198](#_Toc160447033)

[11.5.7 Recent Trends in Software Engineering 199](#_Toc160447034)

[11.6 Artificial Intelligence and Robotics (M.Sc.) 200](#_Toc160447035)

[11.6.1 Generative AI 200](#_Toc160447036)

[11.6.2 Advanced Architectures in AI 201](#_Toc160447037)

[11.6.3 AI Project 202](#_Toc160447038)

[11.6.4 Industry 4.0 and Data Management 203](#_Toc160447039)

[11.6.5 Applied Deep Learning 204](#_Toc160447040)

[11.6.6 New Technologies in AI and Robotics 205](#_Toc160447041)

[11.6.7 Predictive Maintenance and Conditional Monitoring 206](#_Toc160447042)

[12 General Studies 207](#_Toc160447043)

[12.1 German as a Foreign Language A1 – C1 208](#_Toc160447044)

[12.2 English for Technical Purposes (UNIcert II / III) 209](#_Toc160447045)

[12.3 English for Business Purposes (UNIcert II / III) 210](#_Toc160447046)

[12.4 French (UNIcert I / II / III) 211](#_Toc160447047)

[12.5 Spanish (UNIcert I / II / III) 212](#_Toc160447048)

[12.6 Chinese (UNIcert Basis) 213](#_Toc160447049)

[12.7 Russian (UNIcert Basis) 214](#_Toc160447050)

[12.8 Turkish for Business Purposes (UNIcert II; B1 / B2 CEFR) 215](#_Toc160447051)

[12.9 English Foundation Module 1 - Vocabulary and Grammar 216](#_Toc160447052)

[12.10 English Foundation Module 2 - Discussions and Presentation Skills 217](#_Toc160447053)

[12.11 Intercultural Training 218](#_Toc160447054)

[12.12 Facts about Germany for international Students 219](#_Toc160447055)

[13 Courses taught in German language 220](#_Toc160447056)

[14 University address and codes 221](#_Toc160447057)

# Introduction

Dear exchange student,

We are looking forward to welcoming you at Hof University!

The following pages will outline information on our education system, our courses and on how to select them.

THIS STUDY GUIDE IS NOT A CONTRACTUAL DOCUMENT. It is possible that some courses might change at the beginning of the semester. Moreover, the course schedules might overlap.

Please read the information provided in this document carefully. It will make your course choice much easier and thus support you with a smooth start in Hof.

We are looking forward to welcoming you at Hof University!

Your team from  
International Office   
Hof University



# Important contacts

|  |  |  |
| --- | --- | --- |
| **Head of International Office**  *University co-operations* | **Susanne Krause (Ms)** | |
| [susanne.krause@hof-university.de](mailto:susanne.krause@hof-university.de) | |
| Phone: | +49 9281 409 3311 |
| Fax: | +49 9281 409 55 3311 |
|  |  | |
|  |  | |
|  |  | |
| **International Student Coordinator**  *Engineering Department*  *Department of Computer Science* | **Philippa Kauper (Ms)** | |
| [international@hof-university.de](mailto:international@hof-university.de) | |
| Phone: | +49 9281 409 3314 |
| Fax: | +49 9281 409 55 3314 |
|  |  | |
|  |  | |
|  |  | |
| **International Student Coordinator**  *Business Department* | **Marta Malik (Ms)** | |
| [international@hof-university.de](mailto:philippa.kauper@hof-university.de) | |
| Phone: | +49 9281 409 3313 |
| Fax: | +49 9281 409 55 3313 |
|  |  | |
|  |  | |
|  |  | |
| **Erasmus Coordinator**  *Erasmus co-operations* | **Joerg Noldin (Mr)** | |
| erasmus[@hof-university.de](mailto:joerg.noldin@hof-university.de) | |
| Phone: | +49 9281 409 3316 |
| Fax: | +49 9281 409 55 3316 |

­­

# Our study programs at a glance

|  |  |  |  |
| --- | --- | --- | --- |
|  | Language of instruction | | |
|  | German only | Partly in German/  partly in English | English only |
| **Bachelor’s programs** |  |  |  |
| **Business Department** |  |  |  |
| Business Administration (B.A.) |  | ☑ |  |
| Business Law (L.L.B.) |  | ☑ |  |
| Economic Psychology (B.Sc.) | ☑ |  |  |
| Economic and Organizational Sociology (B.A.) | ☑ |  |  |
| International Management (B.A.) |  | ☑ |  |
| **Engineering Department** |  |  |  |
| Design and Mobility (B.A.) | ☑ |  |  |
| Engineering Sciences (B.Eng.) |  | ☑ |  |
| Innovative Textiles (B.Eng.) |  |  | ☑ |
| Textile Design (B.A.) |  | ☑ |  |
| **Department of Computer Science** |  |  |  |
| Business Information Systems (B.Sc.) | ☑ |  |  |
| Computer Science (B.Sc.) |  | ☑ |  |
| Computer Science international (B.Sc.) |  |  |  |
| Media Informatics (B.Sc.) | ☑ |  |  |
| Mobile Computing (B.Sc.) | ☑ |  |  |
| **Department for Innovative and Interdisciplinary Sciences** |  |  |  |
| Communication Design (B.A.) | ☑ |  |  |
| Innovative Healthcare (B.Sc.) | ☑ |  |  |
|  |  |  |  |
|  | Language of instruction | | |
|  | German only | Partly in German/  partly in English | English only |
| **Master’s programs** |  |  |  |
| **Business Department** |  |  |  |
| Applied Psychology (M.Sc.) | ☑ |  |  |
| Compliance, IT and Data Protection (LL.M./M.B.A.) | ☑ |  |  |
| Digital Business Management (M.Sc.) | ☑ |  |  |
| Global Management (M.A.) |  |  | ☑ |
| Human Resources and Labor Law (LLM/MA) | ☑ |  |  |
| Marketing Management (M.Sc.) | ☑ |  |  |
| Supply Chain Management (M.Sc.) |  | ☑ |  |
| Sustainability Law (LLM) | ☑ |  |  |
| **Engineering Department** |  |  |  |
| Composite Materials (M.Eng.) | ☑ |  |  |
| Mechanical Engineering (M.Eng.) | ☑ |  |  |
| Project Management (M.A.) | ☑ |  |  |
| Sustainable Textiles (M.Eng.) |  |  | ☑ |
| Sustainable Water Management and Engineering (M.Eng.) |  |  | ☑ |
| **Department of Computer Science** |  |  |  |
| Applied Research in Computer Science (M.Sc.) |  |  | ☑ |
| Artificial Intelligence and Robotics (M.Sc.) |  |  | ☑ |
| Computer Science (M.Sc.) |  | ☑ |  |

# Education system at Hof UAS

The education system at Hof University is structured according to the Bologna Process, which ensures comparability in the standards of higher education qualifications in the European Union and other participating countries. The most essential part is the European Credit Transfer System (ECTS). This standard enables the comparison of study attainment and performance of students.

At Hof University it results in the following regulations:

* An academic year is structured into 2 semesters:
  + winter semester (October - February) and
  + summer semester (March - July).
* An academic year is equivalent to a workload of 1.500 – 1.800 hours, which is awarded with 60 ECTS.
* The workload of a course is the total of attendance and self-study hours, which the students normally need in order to achieve the defined learning outcome.
* The workload of one semester corresponds to 30 ECTS (1 ECTS = 30 hours of workload).
* For example: a 5 ECTS course corresponds to 150 hours of workload, which includes attendance and self-study hours.
* The semester is structured into a lecture and an exam period. The exam period starts after the lecture period at the end of the semester and runs approximately for 4 weeks.
* Credits are awarded only when the module has been completed and all required examinations have been successfully taken.
* In general, most of the modules at Hof University are designed as final examination. This means there is no continuous assessment during the lecture period and no mid-term examination.

# Academic calendar

|  |  |  |
| --- | --- | --- |
|  | Winter semester  (1st semester) | Summer semester  (2nd semester) |
| Application deadline for exchange students | May 31 | October 31 |
| Orientation weeks  (mandatory) | last 2 weeks of September | first 2 weeks of March |
| Lecture period | October 1 – January 25 | March 15 - July 9 |
| Exam period | January 26 - February 15 | July 10 - July 31 |
| Lecture-free period | February 16 - March 14 | August 1 - September 30 |

# Abbreviations and terms

In this course catalogue and on our website, you will find the following abbreviations and terms:

* **SWS**: Semester hours per week. 2 SWS consists of 1.5 hours (90 minutes)
* **ECTS**: Credits according to European Credit Transfer System
* **Attendance (in hours)**:number of scheduled instruction hours students spend in classes.
* **Self-study (in hours)**: number of hours outside of class or nonscheduled preparation work the typical student is expected to complete.
* **Ac. Year**: Academic Year; indicates in which academic year of their study program the course should be selected.
* **Graduate**: course is offered in a master study program

# Course selection at Hof University

Hof University offers a wide range of study programs in Business, Engineering and Computer Science on undergraduate and graduate level. Exchange students are most welcome to choose from our entire course catalogue within the following regulations:

* Your home institution determines the required workload of your exchange at Hof University. It is advisable to take no more than 30 – 35 credits per semester.
* You may select courses from different departments and study programs. Courses of our Language Center and Career Service are also open for all exchange students. You can also mix courses taught in German and English.
* Exchange students must fulfill the language requirements: at least B2 according to the Common European Framework of Reference for Languages for courses taught in German or English.
* There might be some course changes at the beginning of the semester or course schedules might overlap. For this reason, we would like to ask you to choose at least two additional courses as back-up options. Once our course schedule is finalized, you will be also able to finalize your course selection by deleting courses.
* **Bachelor’s students business** are only allowed to choose undergraduate courses at Hof University
* **Bachelor’s students Engineering and Computer Science** can also take Master courses if they fulfill the requirements
* **Master’s students** may choose also undergraduate courses, as long as they have the approval of their home institution.
* Please note that some courses are only offered in winter semester, and some are only offered in summer semester.
* Exchange students must fulfill the requirements for the courses they choose. Please note that you require previous knowledge in the subject area if you choose advanced level courses (2nd or 3rd year courses).
* Please note that Hof University has two campuses. Both campuses are located in near distance (28 km) and can be reached easily with public transport (20 minutes by train). Please choose your courses accordingly:
  + Campus Hof: main campus for all departments and study programs
  + Campus Münchberg: all courses of Textile Design (Bachelor) and some courses of Innovative Textiles (Bachelor)
* We will inform you about how to choose your courses once you have received your admission letter.

# About our English-taught courses

As we are an international university, courses taught in English are an integral part of our study programs. This ensures that exchange students participate in classes with domestic students and are fully integrated in our academic life.

The following pages show the module descriptions of courses taught in English at Hof University. The course catalogue is structured as follows:

**Business Department:**

* Courses are sorted by area of specialization
* Exchange students shall choose a complete area of specialization and further elective subjects (e.g. language courses)
* Courses from the same study program and same academic year guarantee the lowest overlap in the time schedule
* All courses are offered at our main campus in Hof

**Engineering Department:**

* Courses are sorted by study program and same academic year
* Courses from the same study program and same academic year guarantee the lowest overlap in the time schedule
* Some courses are offered at our main campus in Hof and some are offered at our campus in Münchberg. Please choose accordingly!

**Department of Computer Science:**

* Courses are sorted by study program and academic year
* All courses are offered at our main campus in Hof

**General Studies:**

* Courses are offered by our Language Center and Career Service
* Language courses often require an entry level test if it is not a beginner’s class
* All language courses require an online-registration, as there is a minimum and maximum number of participants (information regarding the entry-level tests and online-registration will be provided at the beginning of the semester).
* If the minimum requirement of participants is not met, courses might be cancelled.

# Business Department

|  |  |  |
| --- | --- | --- |
|  | Course offered in | |
|  | Winter semester | Summer semester | ECTS credits |
| **Area of specialization** |  |  |  |
| **Marketing** |  |  |  |
| Strategic and International Marketing |  | ☑ | 5 |
| Digital Commerce and Digital Marketing | ☑ |  | 5 |
| Principles of Marketing | ☑ |  | 5 |
| Industrial Marketing Management | ☑ |  | 5 |
| Applied Marketing Research |  | ☑ | 5 |
| Marketing Communications | ☑ |  | 3 |
| Global Sales and Key Account Management | ☑ |  | 6 |
| Market Research |  | ☑ | 3 |
| **Finance / Accounting** |  |  |  |
| International Accounting | ☑ |  | 3 |
| International Tax |  | ☑ | 5 |
| Fundamentals of Corporate Finance |  | ☑ | 5 |
| Finance & Accounting in a Multinational Business |  | ☑ | 6 |
| **Human Resource Management** |  |  |  |
| Human Resource Management and Organization | ☑ | ☑ | 5 |
| Human Resources Development |  | ☑ | 5 |
| Leadership | ☑ |  | 5 |
| Case Studies in HRM |  | ☑ | 5 |
| Managing Human Resources |  | ☑ | 3 |
| International Human Resources Management |  | ☑ | 6 |
| **General Management** |  |  |  |
| Introduction to Digital Business | ☑ |  | 5 |
| International Business Management | ☑ |  | 3 |
| Project Management | ☑ | ☑ | 3 |
| International Strategies | ☑ |  | 5 |
| ERP Simulation (SAP) |  | ☑ | 3 |
| Corporate Social Responsibility |  | ☑ | 3 |
| Global Business Strategy | ☑ |  | 6 |
| Facts about Germany | ☑ | ☑ | 3 |
| Process Management |  | ☑ | 5 |
| Business Process Management |  | ☑ | 6 |
| **Law** |  |  |  |
| Introduction to Legal English | ☑ | ☑ | 3 |
| Introduction to Chinese Law | ☑ |  | 5 |
| Competition policy and Law in the EU | ☑ |  | 3 |
| International Contracts/Contract Drafting in International Trade | ☑ |  | 5 |
| Legal Framework for Global Management |  | ☑ | 3 |
| **Economics** |  |  |  |
| Principles of Economics | ☑ | ☑ | 5 |
| International Economic Policy |  | ☑ | 5 |
| International Trade | ☑ |  | 3 |
| Digital Economics | ☑ |  | 6 |
| Economic Framework & Global Governance | ☑ | ☑ | 3 |
| **Logistics** |  |  |  |
| Introduction to Procurement-, Production- and Logistics-Management |  | ☑ | 5 |
| Digital Production, Logistics and Supply Chain |  | ☑ | 5 |
| Supply Chain Management |  | ☑ | 3 |
| Procurement Management | ☑ |  | 3 |
| Operational Excellence & Innovation Management | ☑ |  | 6 |
| International Value Chain Management |  | ☑ | 6 |
| **Electives – Business** |  |  |  |
| Crosscultural Communication and Presentation Skills | ☑ |  | 5 |
| Crosscultural Competence | ☑ | ☑ | 3 |
| Business Communication | ☑ | ☑ | 3 |
| International Negotiating Skills |  | ☑ | 5 |
| Anglo-American Negotiations | ☑ | ☑ | 3 |

## Area of specialization: Marketing

### Strategic and International Marketing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Marketing |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Motivations of Internationalization and Globalization * Strategies of Internationalization and Globalization * Strategic International Market Analysis * Strategies and Modes of Market Entry * International Product Policy * International Pricing Policy * International Communication Policy * International Distribution Policy * Practical Project, Case Studies | | |
| Learning objectives | Students are able to   * explain which strategy of internationalization is appropriate for a specific type of company * explain which mode of market entry and cultivation is constructive in a specific situation * explain the international characteristics of the marketing mix and to apply them to small practical cases, execute international market analyses, develop market entry und market cultivation strategies. | | |
| Prerequisites | None | | |
| Literature list | * Aaker, D. A., McLoughlin, D.: Strategic Market Management, 2010 * Backhaus, K., Büschken, J., Voeth, M.: Internationales Marketing, 2003 * Bennett, R., Blythe, J.: International Marketing, 2002 * Dess, G. G, et.al.: Strategic Management, 2011 * Glowik, M., Smyczek, S.: International Marketing Management, 2011 * Kutschker, M., Schmid, S.: Internationales Management, 2002 * Morschett, D., Schramm-Klein, H., Zentes J.: Strategic International Management, 2010 | | |

### Digital Commerce and Digital Marketing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Marketing |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Internet as a medium vs. Internet as a sales channel * digital markets und digital goods * internet principles: net effects, 4A, data economy, micro marketing, attention * economy, crowd-sourcing & collective intelligence (wisdom of the crowd), customer empowerment & new ways of intermediation, convergence * digital marketing mix (digital 4Ps): keywords: long tail, Open Innovation, dynamic pricing on the internet, corporate website, Onsite marketing, SEO/SEA, email marketing, social media, SMO, content driven marketing, marketing automation, lead generation | | |
| Learning objectives | Students are able to   * recognize the essential tasks of online marketing and ecommerce * use the internet as a promotional and communication platform as well as a sales channel, identify common business models on the internet, common pricing models for online promotion and ecommerce * realize the relevance of social media for the matters of marketing and in addition for the „global“ situation of a company * understand today's relevant online marketing theories (networks, Web2.0, targeting * explain online reputation management, depict legal restrictions (in Germany) basically, develop and adopt strategies in the field of ecommerce and online marketing, e.g. the ability to appraise and evaluate actual instruments of ecommerce and online marketing and use them efficiently; the ability to create, implement and evaluate concepts in the field of online marketing and ecommerce, understanding for network effects and “what makes communities tick” and the ability to use this knowledge for further actions | | |
| Prerequisites | None | | |
| Literature list | None, books are usually too old, single sources in the script | | |

### Principles of Marketing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Marketing |
| Academic year | 1, 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Introduction to marketing * Company and the market process * Principles of buying behavior * Introduction to market research * Development of marketing strategies * Marketing instruments: Product / Promotion / Place / Price * Marketing planning & implementation | | |
| Learning objectives | Students are able to   * explain the most important tasks and objectives of marketing management * identify the principle sources of a company’s competitive advantages * calculate and interpret the most important marketing KPIs * explain the different buying behaviour in business-to-consumer-markets as well as business-to-business-markets * design small market research projects * describe and understand strategic decisions at company level as well as at business unit level * decompose products into their various elements as well as initiate a basic product development process * develop a comprehensive brand and marketing communication strategy * design a marketing channel concept with respect to customers as well as product characteristics * derive and implement an adequate pricing strategy | | |
| Prerequisites | None | | |
| Literature list | * Kuß, Alfred/Kleinaltenkamp, Michael: „Marketing Einführung – Grundlagen, Überblick, Beispiele“, Verlag: Gabler * Homburg, Christian/Krohmer, Harley: „Marketing-management“, Verlag: Gabler * Kotler, Philip/Armstrong, Gary/Saunders, John/Wong, Veronica: „Grundlagen des Marketing“, Verlag: Pearson | | |

### Industrial Marketing Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Marketing |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Principles of Marketing * Principles of Industrial Marketing Management * Formulation of a Sales Program * Implementation of a Sales Program * Evaluation and Control of a Sales Program * Research Paper on “Evaluation of a company’s trade fair performance at the Hannover Fair” | | |
| Learning objectives | Students are able to   * put industrial marketing management in the correct marketing context, * provide adequate definitions and explanations regarding specific marketing terms, * describe and apply the various methods and tools of industrial marketing management, * formulate a sales force management program adapted to company’s specifics, * implement a sales force management program within a company, * evaluate and control the implemented sales force management program as well as derive new measures for the optimization of the existing sales force management program (with respect to a company’s trade fair performance). | | |
| Prerequisites | None | | |
| Literature list | * Johnston, Mark W./Marshall, Greg W.: “Sales Force Management”, Publisher: McGraw-Hill International. * Aaker, David A./McLoughlin, Damien: “Strategic Market Management: Global Perspectives”, Publisher: John Wiley & Sons. * Kotler, Philip/Armstrong, Gary/Wong, Veronica/Saunders, John: “Principles of Marketing”, Publisher: Prentice Hall. | | |

### Applied Marketing Research

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Marketing |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Handling of a practical topic in marketing research (definition, research design, data collection, analysis, presentation of results) * Introduction to the basics of data analysis with SPSS * Use of fundamental methods of data analysis * Interpreting and visualizing data | | |
| Learning objectives | Students are able to   * choose appropriate research designs * apply appropriate survey methods * analyze, summarize and present data using appropriate fundamental statistical methods | | |
| Prerequisites | None | | |
| Literature list | * Böhler, H.: Marktforschung, 3. Auflage, Kohlhammer, Stuttgart 2004 * Green, P., Tull, D., Research for marketing decisions, Prentice Hall, New Jersey, jede ältere Auflage ab der vierten 1977 (wird nicht mehr aufgelegt) * Riedl, J., Eggers, B.: Die empirische Positionierungsstudie auf Basis von Realmarkenurteilen (2013), in: Hofbauer, G., Pattloch, M., Stumpf, M. (Hrsg.): Marketing in Forschung und Praxis, Berlin 2013, S. 549-573 * Riedl, J., Zips, S.: Positionierungsmodell für Marken, in: Planung & Analyse, 2/2015, S. 38 - 42 * Skriptum Mafo und die dort zitierten weiteren Quellen (wird online zur Verfügung gestellt) * Diverse online-Skripten zu SPSS und multivariater Analyse * Backhaus, K., Erichson, Weiber, R.: Fortgeschrittene Multivariate Analysemethoden, 2. Auflage, Springer, Berlin u.a. 2013   Suggestions for further reading will be given in the course | | |

### Marketing Communications

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Marketing |
| Academic year | 3, graduate | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Communication models and marketing communication * Consumer behavior * S-T-P approach (segmenting, targeting, positioning) * Working with moodboards and customer profiling * Working with perceptual maps * Working with agencies (briefing, creative brief, procedure) * Analysis of various current or recent campaigns from English speaking markets | | |
| Learning objectives | Students are able to   * discuss topics from the field of Marketing Communications using an appropriate vocabulary, register and style. * sort customers / potential customers into segments * create a moodboard and customer profile. * select relevant criteria for perceptual maps and plot competing products on the map * prepare a briefing for an agency * research and present a campaign from an Englisch speaking market and evaluate its strengths, weaknesses and success | | |
| Prerequisites | Completion of placement test at Hof University (after semester start) with level C1 is mandatory.  Only for sophisticated students from 3rd or 4th study year. | | |
| Literature list | Fill, Ch.: Marketing Communications. Brands, experiences and participation. Pearson, 2013. | | |

### Global Sales and Key Account Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Marketing |
| Academic year | Graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Introduction * Fundamentals of Business-to-Business-Marketing * Global Sales Management * 4Global Key Account Management | | |
| Learning objectives | Students are able to   * understand the functioning of BtB markets * manage small sales teams * be responsible for a key account * research, discuss and present a selected, sales-related topic from a scientific point of view | | |
| Prerequisites | Principles of Marketing | | |
| Literature list | * Keegan, Warren J./Green, Mark (2011): Global Marketing, 6th edition, Publisher: Prentice Hall International, New Jersey 2011 * Kotabe, Masaaki/Helsen, Kristiaan (2011): Global Marketing Management: International Student Version, 5th edition, Publisher: John Wiley & Sons, New York 2011. * Johnston, M. W./Marshall, G. W. (2010): “Sales Force Management”, 10th edition, New York et al. 2010. * 4Woodburn, D./Wilson, K. (2014): Handbook of Strategic Account Management, Chichester 2014. * Students are advised to use the latest editions of the course books. | | |

### Market Research

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Marketing |
| Academic year | Graduate | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * The students will get an overview of the fundamental methods of qualitative and quantitative market research. * Based on selected case studies of mainly quantitative market research, the students will learn how to approach a variety of market research problems regarding:   + Methodological approach   + Data collecting methods (e.g. questionnaire design, preference measurement, behavioral data, open data)   + Data analysis   + Presentation of results * The cases studies will be evaluated regarding the formulated research objectives versus the de facto realized results | | |
| Learning objectives | Students are able to   * differentiate between general market research approaches * select appropriate study designs for given research objectives * interpret and evaluate results of market research studies | | |
| Prerequisites | None | | |
| Literature list | * Nigel, Bradley: Marketing research: tools & techniques, Oxford Univ. Press (2013 or 2010) * McDaniel, C.D. & Roger, G.: Marketing research, Wiley (2013). * Marketing research. Publication of the American Marketing Association.   Suggestions for further reading will be given in the course. | | |

## Area of specialization: Finance / Accounting

### Financial Reporting

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Finance/Accounting |
| Academic year | 2, 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Basics of the annual report according to IFRS   + user and purpose of accounting   + conceptual framework   + criteria for the recognition of assets and liabilities, revenue recognition according to IFRS 15   + principles of valuation and disclosure * Statement of financial position main items to be reported:   + fixed assets   + intangible assets   + monetary items in foreign currency   + financial instruments   + inventories   + provisions * Accounting for Equity * Statement of Comprehensive Income   + by nature of Expense   + by function | | |
| Learning objectives | Students are able to   * label and contrast expectations on financial reporting of diverse parties * explain the effects of these diverging interests on the basic principles of financial reporting under IFRS * recognize simple as well as more complex transactions in the books of accounts and report them in the financial statements * discern the items of the statement of financial position with respect to recognition, valuation and disclosure and recognize the possible range if necessary for the management decisions * identify the impact of recognition, valuation and disclosure decisions on the financial position of the entity and to give accounting recommendations in order to achieve a true and fair view of the entity * differentiate between cash-effective and non-cash transactions * recognize the differences between income statement by nature respective by function | | |
| Prerequisites | None | | |
| Literature list | * Pellens/Füllbier/Gassen: Internationale Rechnungslegung, 11. Auflage, 2021 * Coenenberg, Adolf G.: Jahresabschluss und Jahresabschlussanalyse, 26. Auflage Stuttgart 2021 * Coenenberg, Adolf G.: Jahresabschluss und Jahresabschlussanalyse Aufgaben und Lösungen, 18. Auflage Stuttgart 2021 | | |

### International Tax

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Finance/Accounting |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Basis of International tax * Double taxation and avoidance of double taxation * Tax Planning * Transfer Pricing * Mergers and acquisitions | | |
| Learning objectives | Students are able to   * describe essential tax basics * describe essential tax calculations * describe essential basics of international taxation | | |
| Prerequisites | None | | |
| Literature list | Thomas Rupp u. a., Internationales Steuerrecht, Schäffer Pöschel, Stuttgart | | |

### Fundamentals of Corporate Finance

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Finance/Accounting |
| Academic year | 1, 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Corporate Finance and the Financial Manager * Introduction to Financial Statement Analysis * Time Value of Money: Valuing Cash Flows * Interest Rates * Bonds * Stock Valuation * Investment Decision Rules * Risk and Return in Capital Markets * Systematic Risk and the Equity Risk Premium * The Cost of Capital * Raising Equity Capital * Debt Financing * Capital Structure * Financial Modeling * Working Capital Management * Short Term Financial Planning | | |
| Learning objectives | Students are able to   * to identify the time value of money and the relationship between risk and Return * to understand the structure of cash flows and evaluate them on the basis of those criteria * to decide which alternative financial strategy should be preferred * identify the trade off between risk and return in different situations with different financial instruments | | |
| Prerequisites | None | | |
| Literature list | Berk/DeMarzo/Harford: Fundamentals of Corporate Finance, 4th ed. 2019  Suggestions for further reading will be given in the course. | | |

### Finance & Accounting in a Multinational Business

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Finance/Accounting |
| Academic year | graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Specific financial risks and opportunities for Multinational Enterprises * Hedging instruments for those risks * Hedge of Transaction, Translation and Operating Exposure out of changes of foreign exchange rates * Reporting of Hedge Transaction under IFRS 9 especially hedge accounting * Currency translation in the consolidated statement under IAS 21 * Consolidation of Joint Ventures and other forms of affiliated companies according to IAS 28, IFRS 3 and 10 | | |
| Learning objectives | Students are able to   * to recognize, describe and quantify the specific exposure of Multinational Enterprises * to develop for the specific risk exposure of a Multinational Enterprise a hedging strategy based on derivative financial instruments, quantify the outcome of those hedging transactions and recognize them in the financial reporting under IFRS * to proof the validity of the hedging strategies for the specific risks of Multinational Enterprises * to recognize the connectivity of financial management und financial reporting and following to develop a meaningful strategy for financial reporting purposes. | | |
| Prerequisites | None | | |
| Literature list | * Eiteman/Stonehill/Moffett, Multinational Business Finance, 14th ed. Amsterdam 2015 * Kieso/Weygandt/Warfield, Intermediate Accounting IFRS Edition, 2nd ed. Hoboken 2014 * Conolly, International Financial Accounting and Reporting, 5th ed. Dublin 2015 | | |

## Area of specialization: Human Resource Management

### Human Resource Management and Organization

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | HR Management |
| Academic year | 1, 2 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | 1. Paradigms in Human Resources and Organizational Management (Scientific Management, Human Relation and its impacts on human resources development and personnel selection) 2. Human Resources and Organizational Planning (Interdependences of disassembly/division of labor and job description, job profile and recruitment) 3. Human Resources and Organizational Development (Tools of Human Resources and Organizational Development, Change Management, process analysis and organizational structure with regard to personnel requirements and leadership) 4. Holistic management approach and business success (Human resource accounting and employee motivation, corporate culture and strategic Human Resources and Organizational Management, Total Quality Management) 5. Management of limits (Human Resources Development and personnel fluctuation, efficiency and effectiveness in the value chain, humanization of labor and process optimization) 6. Digitalization of Human Resources and Organizational Management (Digitalization of personnel selection, of personnel deployment and personnel development. Organization 4.0 as extension of “Lean Organization”, “Make, Buy or Corporate” with regard to digitalization of companies). | | |
| Learning objectives | Students are able to   * understand the principles of the industrial organization and its predecessors (Adam Smith resp. the American railway companies) * recognize the difference between traditional craft production and industrial production * understand the logical correlation between Scientific Management and Ford-System * recognize the Taylor-Ford-Complex in our time * realize the principles of leading and organizing companies in the post-industrial era * classify and apply personnel management tools in their context together with organizational concepts * understand the cultural influences on organization and personnel management * respond to organizational and personnel problems according to the situation | | |
| Prerequisites | None | | |
| Literature list | * Bartscher T., Stöckl J., Träger T., Personalmanagement, München 2012 * Staehle, W. H., Management. München, 8. Auflage 1999 * Dessler, G., Human Resorce Management, New Jersey 2005 * DeCenzo, D., Robbins, St., Human Resorce Management, Danvers 2007 * Wilkinson, A., Redman, T., Contemporary Human Resource Management, Edinburgh 2001 * Kieser, A., Walgenbach, P., Organisation. Stuttgart 2010. * Holtbrügge, D. (2018). Personalmanagement (7. Aufl.). Berlin: Springer. * Kauffeld, S. (2019).  Arbeits-, Organisations- und Personalpsychologie für Bachelor. (3. Aufl.). Berlin: Springer. * Schuler H & U. P. Kanning, U. P. (2014). Lehrbuch der Personalpsychologie (3. Aufl.). Göttingen: Hogrefe. * Schreyögg & Geiger (2016). Organisation   Further literature will be announced during the classes. | | |

### Human Resources Development

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | HR Management |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Importance, subject and targets of personnel development * Process model and success factors * Theory and practice of personnel development within national and international organizations * Learning company in practice: personnel development within large companies and SMEs * Success factors of personnel development in SMEs * Key success factors of personnel development * Personnel development models with focus on benefits and targets from the point of view of the organization and of the individual * Training and personnel development needs analysis * Strategic personnel development: What is the strategic aim of personnel development? * Instruments and methods of personnel development * Personnel selection as part of personnel development * Competence and performance management as a basis for personnel development * E-learning and social-learning * Training and personnel development controlling | | |
| Learning objectives | Students are able to   * understand modern personnel development; * explain basics of personnel development and describe its role within national and international organizations; * analyze the theoretical knowledge and put it into practice; * develop individually practice-oriented case studies together with a presentation and an evaluation | | |
| Prerequisites | None | | |
| Literature list | Becker, M. (2005).Personalentwicklung. Bildung, Förderung und Organisationsentwicklung in Theorie und Praxis  Further literature will be announced during the classes. | | |

### Leadership

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | HR Management |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Long history of a well-established personnel/human resource function in India, going back to 1800 BC. * Human Resource Management (HRM): * Design, development and implementation of strategies, systems and processes that help organisations to deploy their human resources for achieving organizational purposes effectively. * Contextual leadership within Indian organisations which varies across sectors. * Human resource management in Indian organizations and leadership styles used by owners/ managers for successfully managing employees. * Current problems faced by Indian organisations like Maruti Suzuki, Manesar incidence and Hero Honda, Gurgaon incidence. * Industrial relations and labor laws in India. * Relationship between religion and HR practices & business management. * Indian culture and its impact on corporate culture as well as HR practices. | | |
| Learning objectives | Students are able to   * understand the role and responsibilities of the HRM function. * differentiate and explain the systems within HRM, viz. recruitment and selection, performance management, compensation management, employee relationship management and recognize their strategic contribution to business and organizations prevalent in organisations. * appreciate the people management role of the non-HR specialist in organisations and stand up for their interests within the company. * name and explain prevalent leadership styles of organisations. | | |
| Prerequisites | None | | |
| Literature list | * Handout from professor * International Human Resource Management - P. Dawling & M. Festing & A. D. Engle; * Human Resource Management - Gary Dessler * International Human Resource Management - T. Edwards & C. Rees | | |

### Case Studies in HRM

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | HR Management |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Various topics from the field of Human Resource Management in English, e.g.   * Current questions of operational personnel management * Specific research projects of the professional group Human Resource Management and Labor Law * Concrete case study analyses of companies | | |
| Learning objectives | Students are able to   * analyze a topic soundly and at this, recognize and assess the specific disadvantages of the instruments * reflect instruments of personnel policy critically and implement them application-oriented * apply scientific methods * work on common topics in groups and present the results * organize their time well | | |
| Prerequisites | None | | |
| Literature list | * Bartscher T., Stöckl J., Träger T., Personalmanagementt * Bartscher, T./Huber, A., Praktische Personalwirtschaft * Berthel, J./Becker, F.G. , Personal-Management * Breisig, T., Personal * Bühner, R., Personalmanagement * Bröckermann, R., Personalwirtschaft * Drumm, H., Personalwirtschaft * Gaugler, E./Oechsler, W./Weber, W. (Hrsg.), Handwörterbuch des Personalwesens * Holtbrügge, D., Personalmanagement * Jung, H., Personalwirtschaft * Nicolai, C., Personalmanagement   Suggestions for further reading will be given in the course | | |

### Managing Human Resources

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | HR Management |
| Academic year | 3, graduate | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Various topics from the field of Human Resource Management in English, e.g.   * appropriate vocabulary and formulations, * communication strategies and useful language in negotiation and bargaining situations, * various topics from Human Resource Management, for example Employee Rights, Ethics, Conflict Management, Intercultural Management, Employee Health and Safety, Recruitment, Employee Development and Management Styles. These topics will be dealt with in the context of an English-speaking working environment. | | |
| Learning objectives | Students are able to   * Discuss topics from the area of Personnel Management in English with appropriate vocabulary, style and register. * Focus and work on one topic from the field of Personnel Management using case studies. * Present this topic in English using appropriate style and vocabulary. * Write a short academic paper about this topic. | | |
| Prerequisites | Completion of placement test at Hof University (after semester start) with level C1 is mandatory.  Only for sophisticated students from 3rd or 4th study year. | | |
| Literature list | * Dessler, Gary, 2012. Human Resource Management. (13th edition) Pearson ISBN: 978-0273766025; * Pledger, Pat, 2008. English for Human Resources. Cornelsen ISBN: 978-3-464-20481-8 * Sandford, George, 2011. Cambridge English for Human Resources, CUP. Role-plays, case studies and other material. | | |

### International Human Resources Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | HR Management |
| Academic year | graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | 1. The role of corporate HRM in the international context 2. Transnational HRM systems 3. Importance of cultural factors for the establishment of IHRM 4. Strategic HRM in cross border acquisitions and joint ventures 5. Traditional and latest forms of foreign assignments 6. Intercultural performance appraisal and cross-cultural training and development concepts 7. Case studies related to the establishment of a HRM system in the international environment 8. HRM and culture 9. Organization and HRM 10. Cultural particularism and Personality 11. Organizational situation and HRM 12. Organization and global change in HRM 13. Issues and convergence in selected regions. | | |
| Learning objectives | Students are able to   * outline contemporary issues and challenges that a modern IHRM system has to master * expand their knowledge of various dimensions and functional areas of an IHRM * deepen their knowledge of core sectors of an operative IHRM * develop their skills in applying their acquired IHRM knowledge to tackle specific IHRM issues * know & understand basic principles & latest forms of delegation, preparation and support as well as repatriation of expatriates * expand their knowledge regarding the significance of cultural diversity for the creation and implementation of an IHRM system * deepen their knowledge of strategic HRM in international M&As and JVs * actively participate in discussions of selected aspects of IHRM practice, and demonstrate their ability to apply reason and their acquired IHRM knowledge in their argumentation * differ individual & collective variables in organisational culture * recognize cultural aspects in organizational practice * recognize the difference between talk and action in international organizations * apply the rationality of IHRM as a part of business administration. | | |
| Prerequisites | Proficiency in English | | |
| Literature list | * International Human Resource Management: Policies and Practices for Multinational Enterprises (Global HRM); Ibraiz Tarique, Dennis R. Briscoe, Randall Schuler I * International Human Resource Management; Chris Brewster * International Human Resource Management; Anne-Will Harzing, Ashly Pinnington * Global talent management, Routledge, New York (u. a.) 2011, Hugh Scullion (Hrsg.) I * What do talents want? Work expectations in India, China, and Germany; Marlene Walk, Heike Schinnenburg, Femida Handy In: Zeitschrift für Personalforschung, 27. Jrg., Heft 3, 2013, S. 251-278 * The repatriation process – a realistic approach, A. Hyder & M. Lovblad (2007) In: Career Development International, 12, 264-281 * Retaining repatriates, K. Tyler (2006). In: HR Magazine, 51, 97-102 * Dawling, Peter J. / Festing, Marina / Engle, Allen D.: International Human Resource Management. Singapore 2013, 6th edition. * Dessler, Gary: Human Resource Management. London / New York 2008, 11th edition. * Edwards, Tony / Rees, Chris: International Human Resource Management. London / New York 2011, 2nd edition. * Al-Arkoubi, Khadija / McCourt, Willy: The Politics of HRM: Waiting for Godot in the Moroccan Civil Service. * Alas, Ruth: Human Resource Management in Cultural context: Empirical Study of 11 Countries. * Elena, Shulzhenko: Human Resource Management and Labour Relations in Post-Transitional Russia. WZB Discussion Paper SP III 2012–303, January 2012. | | |

## Area of specialization: General Management

### Introduction to Digital Business

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | 1, 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * technological basics * concepts of information technology in digital business * software in digital business * applications and information systems in the company * digitalization in practice * basics of digital business models (Internet economy) * practical handling of business management applications | | |
| Learning objectives | Students are able to   * deal confidently with basic components of an IT infrastructure and its applied software and describe the interaction of these elements, * show knowledge and skills in the following areas:   ­\_ fundamentals and basic concepts of computer science and information technology  \_ subareas and historical development up to current fields of application of digitisation in practice (e.g. IoT)  \_ hardware and software components and appropriate operating systems  \_ process support through suitable application systems and their areas of application in the company (e.g. ERP, CRM, etc.)  \_ evaluation of the benefit of information systems for business process support in the digital corporate environment   * solution of complex issues through independent application of the most widely used business software solutions in practice. | | |
| Prerequisites |  | | |
|  |  | | |
| Literature list | * Becker, W./ Eierle, B./ Fliaster, A./ Ivens, B.S./ Leischnig, A./ Pflaum, A./ Sucky, E.: Geschäftsmodelle in der digitalen Welt. Strategien, Prozesse und Praxiserfahrungen, Publisher: Springler Gabler. * Clement, R./ Schreiber, D./ Pakusch, Ch./ Bossauer, P.: Internet-Ökonomie Grundlagen und Fallbeispiele der digitalen und vernetzten Wirtschaft, 4th edition, Publisher: Springler Gabler. * Fend, L./ Hofmann, J.: Digitalisierung in Industrie-, Handels- und Dienstleistungsunternehmen : Konzepte - Lösungen – Beispiele, 2nd edition, Publisher: Springler Gabler. * Kollmann, T: E-Business-Grundlagen elektronischer Ge-schäftsprozesse in der Digitalen Wirtschaft, 7th edition, Publisher: Springler Gabler. * Leimeister, J.M./ Stahlknecht, P./ Hasenkamp U.: Einführung in die Wirtschaftsinformatik, 12th edition, Publisher: Springler Gabler. | | |

### International Business Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | 2, 3 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Introduction in international strategic management, strategic analysis, creating and implementing strategies, case studies * The lecture focuses on the internationalization of enterprises. In the first approach, it highlights empirical cases which help to understand the complexity and individuality of international business * Furthermore, the lecture deals with leadership and management in international enterprises, strategic organizational design & structure for international operations, multi-level concepts of international business & cultural forms, location issues and special topics (global strategy, change & organizational transformation) of the international company * The aim is to give the students the skills and the ability to judge how an international company can analyze, develop, and execute its internationalization, so that the internationality of the company becomes a competitive advantage and therefore can contribute to increase the company's economic value | | |
| Learning objectives | Students are able to   * analyze simple cases strategically and derive appropriate strategies, * discuss how companies internationalize and how this internationalization will impact their structure, operations, organizational culture and systems, * evaluate different alternative forms and concepts of internationalization, which can contribute to the solution of many going-international, multinational and transnational problems, * describe some of the concepts of internationalization and their advantages and disadvantages and creatively act on the correct concept for a company, * analyze and evaluate the overall global strategy of an international business. | | |
| Prerequisites | None | | |
| Literature list | * Aaker D. A./ McLoughlin D.: Strategic Market Management, Publisher: Wiley. * Assen, M. v./ Berg, G. v.d./ Pietersma, P.: Key Management Models, Publisher: Prentice Hall. * Bartlett, A./ Beamish, P. W.: Transnational Management, Publisher: McGraw-Hill. * Cavusgil, T./ Knight, G./ Riesenberger, J.: International Business Management, Publisher: Prentice Hall. * Dess, G. et. al., Strategic Management, Publisher: McGraw-Hill/Irwin. * Ghemawat, P.: Redefining Global Strategy, Publisher: HBS Press * Kutschker, M./ Schmidt, S.: Internationales Management, Publisher: Oldenburg * Morschett, D./ Schramm-Klein, H./ Zentes, J.: Strategic International Management, Publisher: Gabler | | |

### Project Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | 2, 3 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 53 |
| ECTS | 3 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Concepts and methods of project management * Aspects and phases of project management * Importance of project management in business practice and its needs , processes of PM, objectives and scope of projects, scheduling and tasks (WBS – Work Breakdown Structure), time management, cost & budget management, quality management, project tracking, communication management, reports, change management, risk management, organizational structures, people management and project completion & closing * Soft Skills’ such as team spirit, organizational behavioral techniques, conflict management, customer focus, networking, collaborative management and self-management | | |
| Learning objectives | Students are able to   * explain the different phases of the project, procedures/processes for project planning, project documentation, project monitoring & controlling * work in teams and apply the methods of people and project management * take on responsibility for a small project in an operational environment or make a considerable contribution to the success of a project as a valuable member within a larger project team. | | |
| Prerequisites | None | | |
| Literature list | * The Portable MBA – Project Management- Eric Verzuh * Project Management Professional Study Guide 3rd Edition * Lecture Notes | | |

### International Strategies

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Advanced studies in international strategic management, strategic analysis, creating and implementing strategies, case studies * The lecture focuses on the internationalization of enterprises. In the first approach, it highlights empirical cases which help to understand the complexity and individuality of international business * Furthermore, the lecture deals with leadership and management in international enterprises, strategic organizational design & structure for international operations, multi-level concepts of international business & cultural forms, location issues and special topics (global strategy, change & organizational transformation) of the international company * The aim is to give the students the skills and the ability to judge how an international company can analyze, develop, and execute its internationalization, so that the internationality of the company becomes a competitive advantage and therefore can contribute to increase the company's economic value | | |
| Learning objectives | Students are able to   * analyze simple cases strategically and derive appropriate strategies, * discuss how companies internationalize and how this internationalization will impact their structure, operations, organizational culture and systems, * evaluate different alternative forms and concepts of internationalization, which can contribute to the solution of many going-international, multinational and transnational problems, * describe some of the concepts of internationalization and their advantages and disadvantages and creatively act on the correct concept for a company, * analyze and evaluate the overall global strategy of an international business. | | |
| Prerequisites | None | | |
| Literature list | * Aaker D. A./ McLoughlin D.: Strategic Market Management, Publisher: Wiley. * Assen, M. v./ Berg, G. v.d./ Pietersma, P.: Key Management Models, Publisher: Prentice Hall. * Bartlett, A./ Beamish, P. W.: Transnational Management, Publisher: McGraw-Hill. * Cavusgil, T./ Knight, G./ Riesenberger, J.: International Business Management, Publisher: Prentice Hall. * Dess, G. et. al., Strategic Management, Publisher: McGraw-Hill/Irwin. * Ghemawat, P.: Redefining Global Strategy, Publisher: HBS Press * Kutschker, M./ Schmidt, S.: Internationales Management, Publisher: Oldenburg * Morschett, D./ Schramm-Klein, H./ Zentes, J.: Strategic International Management, Publisher: Gabler | | |

### ERP Simulation

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | 2 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 80 |
| ECTS | 5 | Course offered in | Winter semester  Minimum number of participants: 4 |
|  |  |  |  |
| Course content | * Introduction (About ERPsim, SAP Navigation) * Distribution Game * Manufacturing Game | | |
| Learning objectives | Students are able to   * navigate in the SAP ERP system * understand, execute and analyse Planning Processes, Procurement Processes and Sales Processes as well as Production Processes | | |
| Prerequisites | None | | |
| Literature list | Participant’s Guide: Manufacturing Game, <http://erpsim.hec.ca>, ISBN 978-0-9866653-2-5  Further information after course start | | |

### Corporate Social Responsibility

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | 2 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) |  |
| ECTS | 3 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Basics of CSR: Definitions, legal and societal frameworks * Concepts and trends of corporate social responsibility in the academe and practical application * Examples of implementing CSR in business (international, national and regional) * Management and corporate strategies relating to CSR * Discussing the relationship of realization of profits and corporate responsibility | | |
| Learning objectives | Students are able to   * provide differentiated arguments on questions a relevant to our society * know concepts that help to critically reflect the term “Corporate Social Responsibility” * are sensitized to the importance of ethics for businesses * to define the practical scope and limits of CSR * have gained a realistic idea of the implementation of management and corporate strategies relating to CSR | | |
| Prerequisites | None | | |
| Literature list | * Backhaus-Maul: Corporate Citizenship in Deutschland: Gesellschaftliches Engagement von Unternehmen. Bilanz und Perspektiven (Bürgergesellschaft und Demokratie) * Hardtke, A.: Gesellschaftliche Verantwortung von Unternehmenvon der Idee der Corporate Social Responsibility zur erfolgreichen Umsetzung * Becker,J.: Fair Trade und Corporate Social Responsibility. Zusammenhänge und Hintergründe * Fuchs-Gamböck, K.: Corporate social responsibility im Mittelstand - wie Ihr Unternehmen durch gesellschaftliches Engagement gewinnt * Schmeisser, Rönsch, Zilch: Shareholder Value Approach versus Corporate Social Responsibility. Eine unternehmensethische Einführung in zwei konträre Ansätze   Suggestions for further reading will be given in the course. | | |

### Global Business Strategy

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Advanced studies in international strategic management, strategic analysis, creating & implementing strategies, case studies * Focus on global enterprises: empirical cases to understand the complexity and strategy of these companies. * Leadership & management in international enterprises, strategic organisational design & structure for international operations, multi-level concepts of international business & cultural forms, location issues & special topics (global strategy, change & organisational transformation). * Skills & ability to judge how an international company can analyse, develop & execute its internationalisation to make internationality a competitive advantage & therefore a contribution to the company's economic value. | | |
| Learning objectives | Students are able to   * analyse complex cases strategically & derive appropriate strategies, * discuss how companies internationalise and how this internationalisation will impact their structure, operation, organisational culture and systems, * evaluate different alternative forms & concepts of internationali-sation, which can contribute to the solution of many going-international, multinational and transnational problems * describe concepts of internationalisation & their pros & cons & creatively act on the correct concept for a company, * analyse and evaluate the overall global strategy of an international business. | | |
| Prerequisites | None | | |
| Literature list | * Aaker D. A./ McLoughlin D.: Strategic Market Management, Publisher: Wiley. * Assen, M. v./ Berg, G. v.d./ Pietersma, P.: Key Management Models, Publisher: Prentice Hall. * Bartlett, A./ Beamish, P. W.: Transnational Management, Publisher: McGraw-Hill. * Cavusgil, T./ Knight, G./ Riesenberger, J.: International Business Management, Publisher: Prentice Hall. * Dess, G. et. al., Strategic Management, Publisher: McGraw-Hill/Irwin. * Ghemawat, P.: Redefining Global Strategy, Publisher: HBS Press * Morschett D./ Schramm-Klein H./ Zentes J.: Strategic International Management, Verlag: Gabler. | | |

### Facts about Germany

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | undergraduate,  graduate | Attendance (in hours) | 28 |
| Semester hours per week | 2 | Self study (in hours) | 62 |
| ECTS | 3 | Course offered in | Winter semester Summer semester |
|  |  |  |  |
| Course content | * Facts about the Federal Republic of Germany (historical, political, cultural and regarding the economy) * Studying in Germany and role of the student in Germany * Applying for a job / internship in German / German job market and identification of potential and promising employers * European and German Megatrends | | |
| Learning objectives | Students are able to   * get an overview about topics related to Germany and German economy. * join discussions regarding Germany in general and regarding the German economy in particular * obtain insights regarding study and work culture and regarding the expectations towards them. * identify and contact future employers | | |
| Prerequisites | Limited number of participants, Registration required | | |
| Literature list | * Siebert, Horst (2005): The German Economy * Miles, Andrew (2005): Doing business and investing in Germany | | |

### Process Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | 1. . Introduction   a. Customer Orientation  b. Process orientation (mindset)  c. Process lifecycle  d. Analysis and optimization of processes  2. Processes  3. Concepts of process management  4. Optimization and management concepts  5. Organization and implementation of business process management  6. Process controlling  7. Modeling and analysis of processes  8. Practical exercises with methods, tools and software  During the lecture part, an overview is conveyed, in the exercise part the learned is applied with tasks and case studies.  In addition, the students have to prepare tasks independently on their own and/or in groups outside the course from date to date. | | |
| Learning objectives | Business process management (BPM) serves to constantly (re)align the company's business processes with the customer (i.e., the market) and to support the process with suitable information and communication technology.  Students will be familiar with the importance of this management task, particularly in the context of digitization, and will be able to apply it in a structured manner along the entire process lifecycle.  Students are able to apply and present selected methods and (IT-) tools for problems within the individual activity bundles of the process lifecycle.  Students are able to visualize complex process issues using suitable software tools. | | |
| Prerequisites |  | | |
| Literature list | Mandatory:   * GADATSCH, Andreas, 2017. Grundkurs Geschäftsprozess-Management: Analyse, Modellierung, Optimierung und Controlling von Prozessen[online]. Wiesbaden: Springer Fachmedien Wiesbaden PDF e-Book. ISBN 978-3-658-17179-7. Verfügbar unter: <https://doi.org/10.1007/978-3-658-17179-7> . * BECKER, Jörg, 2012. Prozessmanagement: ein Leitfaden zur prozessorientierten Organisationsgestaltung[online]. Berlin [u.a.]: Springer Gabler PDF e-Book. ISBN 978-3-642-33843-4, 978-3-642-33844-1. Verfügbar unter: <https://doi.org/10.1007/978-3-642-33844-1>. * WESKE, Mathias, 2012. Business process management: concepts, languages, architectures. 2. Auflage. Berlin [u.a.]:Springer. ISBN 978-3-642-28615-5, 3-642-28615-1   Optional:   * DUMAS, Marlon und ET AL., 2013. Fundamentals of business process management. Berlin [u.a.]: Springer. ISBN 978-3-642-33142-8, 3-642-33142-4 * REICHERT, Manfred und Barbara WEBER, 2012. Enabling flexibility in pro-cess-aware information systems: challenges, methods, technologies. Berlin [u.a.]: Springer. ISBN 978-3-642-30409-5, 978-3-642-30408-8 * FLEISCHMANN, Albert, 2012. Subject-oriented business process management [online]. Heidelberg [u.a.]: Springer PDF e-Book. ISBN 978-3-642-32392-8, 978-3-642-32391-1. Available under: <https://doi.org/10.1007/978-3-642-32392-8>. * FLEISCHMANN, Albert und andere, 2018. Ganzheitliche Digitalisierung von Prozessen. 1. Auflage. Wiesbaden: Springer Vieweg. ISBN 978-3-658-22647-3   Further literature will be announced during the classes. | | |

### Business Process Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | General Management |
| Academic year | Graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * The lecture focuses on the entire Business Process Management Lifecycle, including the process phases Identification, Discovery, Analysis, Redesign, Implementation and Monitoring & Controlling. * Furthermore, the lecture deals with the different stakeholders involved with a business process throughout its lifecycle, with respect to their roles and responsibilities * The BPM presentation in the lecture is illustrated by BPMN (Business Process Model and Notation) industry standard defined by the Object Management Group. * The lecture provides an integrated step-by-step blue-print for designing, implementing and sustaining process management * Students will also learn about the Toyota’s unique approach about to Lean Management – the 14 principles that drive Toyota’s quality and efficiency-obsessed culture. * During a project in cooperation with a company, processes will be analyzed and suggestions for improvement will be derived. | | |
| Learning objectives | Students are able to   * learn how work should be performed in an organization as to ensure consistent outputs and to take advantages of improvements opportunities, like reducing costs, execution times and error rates. * understand how the right combination of long-term philosophy, processes, people and problem solving can transform an organization into a lean, learning organization – The Toyota Way. * identify and analyze business processes in terms of their inherent inefficiency and how to improve these processes as to deliver the added values to their organization and its customers. | | |
| Prerequisites | None | | |
| Literature list | * Fundamental of Business Process Management – Marlon Dumas, Marcello La Rosa, Jan Mendling and Hajo A. Reijers – Springer * The Toyota Way – 14 Management Principles from the World’s greatest Manufacturer – Jeffrey K. Liker – McGraw-Hill * White Space Revisited – Creating Value Through Process – Geary A. Rummler, Alan J. Ramias and Richard A. Rummler - Wiley | | |

## Area of specialization: Law

### Introduction to Legal English

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Law |
| Academic year | 1, 2 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Overview over different legal systems, in particular Civil Law and Common Law * Building knowledge and understanding of legal English with special focus on contracts * General principles of drafting contracts in English taking into consideration the particularities of the Common Law * Drafting / review of selected clauses (language, choice of law, forum / arbitration etc.) | | |
| Learning objectives | The students are able to   * know the basic features of the Common law * acquire knowledge of English legal terminology with special reference to contracts * understand, revise and draft typical and practice-related contract terms in English even taking into consideration particularities of the Common law | | |
| Prerequisites | None | | |
| Literature list | * CORNELIUS / BOLLAG / KUHN\_SCHULTHESS / WIEBALCK / NORMAN / von ZEDWITZ, The Legal English Manual, 2nd edition, 2017 * MARTIN, Jacqueline, The English Legal System, 8th edition, 2016 * RICHARDS / MOLLICA, English Law and Terminology, 4th edition, 2016 Further literature recommendations will be announced during lecture. | | |

### Introduction to Chinese Law

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Law |
| Academic year | 2, 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Introduction to the history and development of Chinese Law * Overview over the sources of Chinese Law with special focus on contract law * Introduction to the investment law of China * Introduction to the intellectual property law of China | | |
| Learning objectives | The students are able to…   * know the basic concepts and principles of the history and development of a Foreign National Law * know different sources of law of a foreign country and have a basic understanding of the underlying legal system * are familiar with practice-relevant types of foreign investment and the protection of intellectual property in a foreign country * are able to detect typical problems of a foreign investor, to develop independent solutions and present them in small groups | | |
| Prerequisites | Good knowledge of the English language | | |
| Literature list | * Binding / Pißler / Xu (ed.), Chinesisches Zivil- und Wirtschaftsrecht, Frankfurt a.M., 2015 * Bu, Yuanshi (ed.), Chinese Civil Law, Munich, 2013 * Bu, Yuanshi, Einführung in das Recht Chinas, 2nd ed., Munich, 2017 * Heuser, Robert, Grundriss der Geschichte und Modernisierung des chinesischen Rechts, Baden-Baden, 2013   Further literature recommendations will be announced during lecture. | | |

### International Contracts

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Law |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Overview over the differences between common law and civil law systems and the implications on contracts * overview over manifestations of foreign trade, important institutions of global economy and the Single European Market * overview over the legal environment in foreign trade (International private law, International contract law, international civil procedure law, Incoterms, CISG) * examples of practice-relevant types of international contracts | | |
| Learning objectives | The students are able to   * know the basic concepts and principles of common law and civil law systems and understand the main differences. * have a basic understanding of manifestations of foreign trade, important institutions of global economy and the Single European Market. * understand the legal environment in foreign trade. * familiarize with practice-relevant types of international contracts. * detect typical problems existing in international contracts, to develop independent solutions and present them in small groups. | | |
| Prerequisites | Good knowledge of the English language | | |
| Literature list | Will be announced in the class. | | |

### Legal Framework for Global Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Law |
| Academic year | graduate | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * the various legal families in the world and their differences; basics of comparative law; * the private international law for contracts; * the UN Sales Law Convention (CISG), in particular the rights of the buyer; * the trade relevant fields of law of the most important emerging economies (BRICS): tariff, foreign trade, company, competition, employment, environmental and tax law; * corporate governance and fighting corruption; * common features and differences in the attractiveness of these legal systems for foreign investors; * strategies for avoiding legal mistakes when doing investments abroad; * enforcing your rights, arbitration | | |
| Learning objectives | The students are able to   * assess differences between various legal families in the world; * define the law applicable to international business contracts; * analyze the UN Sales Law Convention and to apply its pro-visions safely and systematically to a specific case; * derive the legal framework conditions for an investment abroad, for instance tariffs, import restrictions, promotion of foreign investment, company law, competition law, employment law, environmental law and tax law; * thereby determine the common features in the legal systems of the most important emerging market countries (BRICS); * evaluate the legal chances & risks of an investment abroad; * avoid legal mistakes when doing investments abroad and * to appreciate the options for enforcing one’s rights. | | |
| Prerequisites | English on an advanced level | | |
| Literature list | * COLLINS, David, An Introduction to International Investment Law, 2016 * DEVA, Surja, Socio-Economic Rights in Emerging Free Mar-kets: Comparative Insights from India and China, 2015 * Dolzer/Schreuer, Principles of International Investment Law, 2012 * Ngwu/Osuji (editors), Corporate Governance in Developing and Emerging Markets, 2016 * ORLOV, Vladimir, Introduction to Business Law in Russia, 2016 * Patel/Nagar (editors), Law and Economics in India, 2016. | | |

## Area of specialization: Economics

### Principles of Economics

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Economics |
| Academic year | 1, 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Functionality of market economy and pricing processes/ Role of government * Key drivers of demand and supply * Competition process and competition parameters/ Features of digital markets * Decision making process under uncertainty (game theory) * Measuring and meaning of macroeconomic indicators * International capital in- and outflow, international trade and the Balance of payments * Exchange rate determination and purchasing power parity * Output gap and economic growth potential * The multiplier and accelerator analysis/process of economic growth * Price stability/role of central bank * Employment: Neo-classical and Keynesian labor market * Environmental economics/ sustainable development | | |
| Learning objectives | The students are able to   * Understand the market mechanism and the principles of demand and supply * Explain and describe how markets work and how the price is determined * Figure out and report on the competition as a process and how corporations meet the competition * Understand and evaluate the role of government, in the market economy and how it affects the consumer and producer behavior * Analyze and describe the meaningful of macroeconomic indicators * Explain and evaluate the role of international trade and capital in- and outflows * Represent and explain the determination of the value of a currency * Illustrate and calculate the impact of investment on economic growth * Reflect and evaluate the meaning of price stability and its measurement * Illustrate the neoclassical and Keynesian labor market and draw the conclusion for the labor market policy * Understand and explain the concept of sustainability | | |
| Prerequisites | Minimum number of 4 participants! | | |
| Literature list | * Samuelson, P./ Nordhaus, W.: Economics , McGrow Hill * Mankiw, G./Tylor, M.: Economics, Thomson learning * Blanchard, O.: Macroeconomics, Pearson books * Sabry, M. A.: Angewandte Mikroökonomie, Shaker * Görgens, E./ Ruckriegel, K.: Grundzüge der makroökonomischen Theorie, Lucius | | |

### International Economic Policy

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Economics |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Features of the business cycle. * Theories and indicators of the Business cycle. * Turning points of the cycles. * Business cycles in different countries (case studies). * Tools of Business cycle policies: Fundamental of fiscal policy; fundamental of monetary policy. * The role of the government; government budget policy. * The role and targets of the central bank. * Exchange rate policies and exchange rate systems. * Back ground implication of financial market crisis and economic crisis. * Structural reforms and economic growth policy. * International environmental policy: Emission trading systems and the Kyoto accord. * Economics of developing countries/development economic policy. | | |
| Learning objectives | The students are able to   * recognize and explain the reasons and implications for business cycle fluctuations. * recognize and draft the necessity of business cycle policy. * describe and evaluate the role of monetary and exchange rate policy to regulate business cycle. * describe and evaluate the role of fiscal und monetary policy and their implications in selected countries. * denominate and explain the economic indicators und reasons for economic crisis. * express and evaluate exchange rate policies and exchange rate regimes in selected countries. * describe and appraise different fields of economic policy, especially the international environmental policy. * illustrate the specific problems of less developed countries and express and evaluate the consequences of development policy. * illustrate and explain structural change and reforms and economic growth policy. | | |
| Prerequisites | Formal requirements according to the study and examination | | |
| Literature list | * Aghion, P./Howitt, P.: Endogenous Growth Theory, Cambridge, Mass. * Altmann, J.: Wirtschaftspolitik, einführende Theorie mit praktischen Bezügen, Stuttgart * Assenmacher, W.: Konjunkturtheorie, München-Wien. * Azariadis, C.: International Macroeconomics, Oxford. * Frenkel, M./Hemmer, H.R.: Grundlagen der Wachstumstheorie, München. * Frowen, S.F./Hölscher, J.(Hrsg.): The German Currency Union, London. * Görgens, E./Ruckriegel, K.H.: Europäische Geldpolitik, Düsseldorf. * Isard, P.: Exchange Rate Economics, Cambridge. * Jones, Ch.: Introduction to Economic Growth, New York u.a. * Koch, W./Czogalla, Ch.: Grundlagen und Probleme der Wirtschaftspolitik, Köln. * Krugman, P.R./ Obstfeld, M.: International economics, Boston u.a. * Ralf, K.: Business Cycles, New York. * Sabry, M.A.: Zur Wahl des Wechselkursregimes in den Entwicklungsländern am Beispiel Argentiniens (The exchange rate regime in LDC; the example Argentina, WiSt 7/2006. * Samuelson,P./ Nordhaus, W.: Economics , Boston. * Tichy, G.: Konjunkturpolitik, Berlin u.a. * Tomann, H.: Stabilitätspolitik, Berlin u.a. * Willms, M.: Internationale Währungspolitik, München. * Zameck, W.: Finanzwissenschaft: Grundlagen der Stabilisierungspolitik, München. * Zarnowitz, V.: Business Cycles, Chicago. * Axel Fronek: Umweltmanagementsysteme auf dem Prüfstand. Die Bedeutung von EMAS und ISO 14001 im Konzert der umweltpolitischen Instrumente, Hamburg. * Klaus Georg Binder: Grundzüge der Umweltökonomie. München. * Alfred Endres: Umweltökonomie, Stuttgart. * Andreas Eickhoff: Transparency in the Banking Sector, A Microeconomic Analysis of Informational Aspects in the Credit Market, Hamburg. | | |

### Digital Economics

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Economics |
| Academic year | graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Basics of Digital Economics: Network Theory, Platform Economy, Data & Algorithm Economy * Basics of operational Digital Economy: Digital Marketing (focus on Social Media) & Key Performance Indicators * Integrated practice: accompanying group work, application of theoretical basics by building and monitoring of an own digital network on Facebook, Linkedin, Snapchat, Twitter etc. * Advanced/specialized Knowledge of Digital Economics and of Trending Topics: e.g. Artificial Intelligence, Blockchain/Smart Contracts, Internet of Things | | |
| Learning objectives | The students are able to   * Explain and apply the basic instruments of Digital Economy based on a combination of theory and practice * Explain the developments, causes and effects of actions within the context of digital economy and develop measures for implementation | | |
| Prerequisites | None | | |
| Literature list | No Books! Finding the perfect sources is part of the task. | | |

## Area of specialization: Logistics

### Introduction to Procurement-, Production- and Logistics-Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Logistics |
| Academic year | 1, 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | basics of economical value creation / function and objectives of procurement / material classification and demand analysis / procurement market research / supplier management / order planning / function and objectives of production / examples of manufacturing and production processes / production of goods / production of services / production planning and scheduling / state-of-the-art production management approaches / function and objectives of logistics as well as different perspectives of logistics / logistics systems (Supply Chains) / transportation systems / warehousing, order picking and handling / procurement logistics / materials handling/production and logistics / distribution logistics /disposal logistics | | |
| Learning objectives | The students are able to   * describe relevant functions and methods of procurement, production and logistics * identify conflicting goals within and between procurement, production and logistics as well as outline trade-offs * explain basic definitions and issues of the economic value creation process and supply chain, especially the interrelationship of procurement, production and logistics and outline the need for coordination * describe relevant material management issues of internal demand analysis, inventory management and order planning and apply basic methods of material management * characterize and distinguish between common procurement organization concepts and processes and relate to different roles and responsibilities in the context of procurement * explain the function and objectives of supplier management, interpret the results of supplier evaluation and develop a basic supplier evaluation approach * classify the function and relevance of supply market analysis in the value creation process as well as describe the objectives of supply market analysis and the sources of supply market information * outline the characteristics of goods and service production and the differences between them * classify different types of production processes, asses advantages and disadvantages and apply a suitable type of production to a basic example * explain basic production planning and scheduling approaches and apply fundamental methods of production management to simple production problems as well as derive basic optimization approaches * explain objectives, development and challenges of logistics as well as asses the role of logistics as a corporate success factor * describe transportation and warehousing as core functions of logistics and order picking, packing and handling as additional functions as well as identify and asses its key success factors * explain and classify current practice approaches of procurement logistics, materials handling/production, distribution logistics and disposal logistics, identify the requirements and asses advantages and disadvantages. | | |
| Prerequisites | None | | |
| Literature list | * Corsten, H. / Gössinger, R. (2012): Produktionswirtschaft; Einführung in das industrielle Produktionsmanagement * Gleißner, H. / Femerling, J. C. (2011): Logistik: Grundlagen, Übungen, Fallbeispiele * Kiener, S. / Maier-Scheubeck, N. / Obermaier, R. (2012): Produktionsmanagement * Kummer, S. / Grün, O. / Jammernegg, W. (2009): Grundzüge der Beschaffung, Produktion und Logistik * Pfohl, H.-Chr. (2010): Logistiksysteme * Schulte, G. (2010): Material- und Logistikmanagement   Suggestions for further reading will be given in the course. | | |

### Digital Production, Logistics and Supply Chain

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Logistics |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Fundamentals and concepts of digital production, supply chain and logistics * Classification of digitization in the context of business administration * Digital technologies and their application in the context of business objectives (pick-by-light / vision, Cobots, RFID, etc.) * Selection processes of components and technologies in volatile markets * Strategies and objectives in a dynamic environment * Intellectual Property as a challenge in digitization * Favoring organizational and procedural factors for digital implementations (innovation and change management, learning organizations, SCRUM) * Analysis of Case Studie in perspective of best practice * Building blocks of a digital agenda | | |
| Learning objectives | The students are able to   * understand and apply digital terminology related to production, logistics and supply chain topics * assess digitization and its business impact on companies * evaluate digitization technologies in terms of their use and business impact. * determine and track the technological maturity of technologies * assess the challenges of a dynamic environment in terms of goals and strategies * the importance of Intellectual Property in the environment of e.g. Detect 3D printing * assess and positively influence the environment of a digital enterprise * identify and assess the potentials and challenges of a digital business model * development of a plan for the (partial) digital transformation of companies. | | |
| Prerequisites | None | | |
| Literature list | Suggestions for internet sources will be given in the course. | | |

### Supply Chain Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Logistics |
| Academic year | 3, graduate | Attendance (in hours) | 22,5 |
| Semester hours per week | 2 | Self study (in hours) | 67,5 |
| ECTS | 3 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Means of transporting and loading goods * Risk and managing risks * Incoterms and their significance * Correspondence and forms * Invoices and complaints * Organisation of a warehouse | | |
| Learning objectives | The students are able to   * Discuss topics from the field of Supply Chain Management using an appropriate vocabulary, register and style * Have a good command of the vocabulray items and language necessary for working in a supply chain management environment * Compile an academic paper on a topic from the area of Supply Chain Management * Prepare a topic from the area of Supply Chain Management for presentation | | |
| Prerequisites | Completion of placement test at Hof University (after semester start) with level C1 is mandatory.  Only for sophisticated students from 3rd or 4th study year. | | |
| Literature list | * Peter W. Oldham: Logistic Matters, Cornelsen 2011 * Chopra, Sunil, Pearson: Supply Chain Management Strategy, Planning an Operation   Suggestions for further reading will be given in the course. | | |

### Procurement Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Logistics |
| Academic year | graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Introductory Lecture   * + Basics of Procurement Management   + Strategic Impact of Procurement Management   + Supplier Relationship Management   + Risk and Compliance Management   + Digital Transformation of Procurement Processes   + Procurement Strategy   Research Paper about Advanced Issues of Procurement Management | | |
| Learning objectives | The students are able to   * explain the main tasks of procurement management * explain current challenges in procurement management * develop technical and methodical skills to master procurement-related issues * elaborate and present the acquired skills in a professional way and with arguments on an advanced procurement issue | | |
| Prerequisites | Principles of Management | | |
| Literature list | * Darr, W.: Advanced Issues of Procurement Management, tredition Verlag, Hamburg 2019 * Darr, W.: Conception for Procurement Excellence. The performance profile and degree of digitalization of procurement, tredition Verlag, Hamburg 2019 * Darr, W.: Fundamental Issues of Procurement Management, tredition Verlag, Hamburg 2020 * Johnson, P.; Leenders, M.; Flynn, A.: Purchasing and Supply Management, 13th edition, McGraw-Hill 2006 * Lysons, K.; Farrington, B.: Purchasing and Supply Chain Management, 8th edition, Harlow 2012 * Van Weele, Arjan: Purchasing and Supply Chain Management, Cengage Learning EMEA, 6th Edition, Cheriton House 2014   Suggestions for further reading will be given in the course. | | |

### Operational Excellence & Innovation Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Logistics |
| Academic year | graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Methods of OpEx * Methods of Lean Management * TPM techniques (KVP, OEE) * Processes of Six Sigma * Supply and Value chain Networks * Additive production methods (e.g. 3D printing) * Cross functional teams * Methods, phases and techniques of Innovation management | | |
| Learning objectives | The students are able to   * assess the concept of OpEx in an overall company strategy * assess selected methods of Lean Management (e.g. 5S, Muda, Muri etc.) in a context of Logistic and Production processes * interpret selected methods in conjunction with Total Productive Maintenance (TPM) e.g. Kaizen, OEE and apply them accordingly in a production environment * understand the use of Six Sigma and its processes (DMAIC) * select suitable methods to steer and influence supply networks * transfer chances and possibilities of 3D-Printing technique to logistical problems * deal with challenges/chances arising out of Internet of Things (IoT), deduce methods to implement procedures * identify interdisciplinary conflicts, know methods how to deal with it * value Innovation Management for companies * know phases of innovation processes * understand the need to change and adapt the innovation management according to the requirements of a dynamic IoT Environment | | |
| Prerequisites | * Profound knowledge in Logistics and Production (Bachelor) * Basics in Procurement- and Supply Chain Management | | |
| Literature list | * Duggan, K. (2012) Design for Operational Excellence: A Breakthrough Strategy for Business Growth: A Breakthrough Strategy for Business Growth, London. * Miller, A. (2014): Redefining Operational Excellence: New Strategies for Maximizing Performance and Profits Across the Organization, New York. * Mitchell, J. (2015): Operational Excellence: Journey to Creating Sustainable Value, Hoboken, NJ. * Gunther, H.-O. u.a. (Hrsg.) (2005): Supply Chain Management und Logistik: Optimierung, Simulation, Decision Support, Heidelberg * Dahm, M.; Brückner, A.: (2014): Operational Excellence mittels Transformation Management   Further literature will be announced during the classes. | | |

### International Value Chain Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Logistics |
| Academic year | graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Value Chain Models and Network Concepts * Value Chain Goals and Objectives * Structure, Coordination, Intergration * Outsourcing and Offshoring * Supplier Networks and Global Sourcing * Global Production Footprint * Supply Chain Risk Management * IP * Case Studies | | |
| Learning objectives | The students are able to   * analyze and explain global value creation network designs and decisions * compare and asses global value chains * explain, asses and comment on drivers of globalization and interdependencies of globalization and value chain patterns * explain global value chain design and management concepts and approaches e.g. global sourcing and supplier management, risk management, IP Management, global production and logistics footprint etc. and transfer these approaches as well as relevant tools and instruments to cases and practical matters | | |
| Prerequisites | English advanced level | | |
| Literature list | * Porter: Competitive Strategy * Shah: Supply Chain Management * Christopher: Logistics and Supply Chain Management * 4. Schmid/ Grosche: Managing the International Value Chain in the Automotive Industry * Werner: Supply Chain Management * Literature cited in lecture material/presentations | | |

## Area of specialization: Electives - Business

### Crosscultural Communication and Presentation Skills

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Electives - Business |
| Academic year | 2, 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Presentation Skills:   * Setting up and delivering a well-organized, dynamic and memorable power point presentation based on business-related, cross-cultural issues. * Incorporating theories and skills of making effective presentations in individual speaking assignments. * Eliminating deficiency in individual presentations techniques. * Skills and techniques that help raise students’ confidence and ease anxiety with presenting in a foreign language. * Elevating students’ verbal and non-verbal communication skills. * Using various rhetorical devices including stories, examples, data, and other sources to support and enliven presentations. * Critical delivery skills of physical presence, vocal resonance and distinctive language. * Identifying and applying culture-specific presentation skills and styles.   Cross-cultural Communication Skills:   * Overview and analysis of different meanings and dimensions of "culture". * Description and analysis of the impact of culture on business practice in a number of selected countries/regions (Europe, Southeast Asia, US, Latin America). * High-context vs. low-context communication.   + Direct versus indirect form of communication   + Importance of non-verbal communication * The various aspects of ‘face’ in business communication.   + Face’ – the social currency in relationships   + The importance of ‘face’ in management-staff relations   + The importance of ‘face’ in negotiations   + How to handle conflictive situations with staff and clients * Effective training and learning approaches across cultures * Hierarchy, delegation and management control - How leadership differs across cultures. * Motivation and performance feedback * Strategies for managing international teams and projects. * Communicative strategies for culture-specific negotiation styles. * Ethical dilemmas and social responsibility facing firms in different cultures. | | |
| Learning objectives | Presentation Skills: By the end of this course students will be able to   * better open; structure and end their presentations, * understand the importance of creating and maintaining audience connection and use critical action steps to keep their audience involved and responsive. * employ critical delivery skills of physical presence, vocal resonance, and distinctive language. * manage to design and integrate audio/visual materials. * deal with conflict and criticism from their audience.   Cross-cultural Communication Skills: Students   * develop an understanding of how cultures differ in their approaches and attitudes to basic business variables, including time, planning, communication style, team leadership, trust, and relationship building. * adopt the required skills and mindset to manage, operate and interact in a multi-cultural work environment. * are able to identify cross-cultural issues and demonstrate their ability to address and manage these issues in an international business environment. * have improved their skills to identify and deal with potential conflictive situations. * can filter out adequate culture-specific learning and training methods. * have refined their skills to better interact cross-culturally with business partners, customers and suppliers. * have refined their skills to culturally translate business goals and strategies into other cultural business settings through the analysis of cross-cultural business scenarios and case studies. | | |
| Prerequisites | A minimum level of B2 is mandatory! | | |
| Literature list | * Speaking Globally; Elizabeth Urech; Discussing in English; Reclam Fremdsprachentexte; ISBN 078-315019715 8 * Interkulturelle Wettbewerbsstrategien; Christian Scholz; ISBN 978-3 825239930 * Management Worldwide; David J. Hickson & Derek S. Pugh; ISBN-13: 978-01410060315. * Riding the Waves of Culture; Fons Trompenaars; ISBN-13: 978-1904838388 (23.02.2012) * Intercultural Communication in the Global Workplace; Linda Beamer, Iris Varner; ISBN 0-07-239690-3 * Cultures and Organizations - Software of the Mind: Intercultural Cooperation and Its Importance for Survival; Geert Hofstede, Gert Jan Hofstede; ISBN-13: 978-00716641898. * When Cultures Collide: Leading Across Cultures: Leading, Teamworking and Managing Across the Globe; Richard D. Lewis; ISBN-13: 978-19048380 | | |

### Crosscultural Competence

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Electives - Business |
| Academic year | 1, 2 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Overview and knowledge of the theoretical basics of intercultural competence. * Application-oriented understanding of different cultural dimensions. * Awareness of the challenges of intercultural cooperation. * Intercultural competence on a cognitive and emotional level. * Basic knowledge of cultural standards within a national and organizational context. | | |
| Learning objectives | The students are able to   * recognize the socio-cultural conditionality of one’s own behavior and that of others * are able to self-reflectively assess the effect of their own cultural background in intercultural communication and cooperation in order interact adequately with other cultures * develop work-oriented intercultural knowledge and a sensitization for the challenges of intercultural cooperation | | |
| Prerequisites | Min. 4 participants! | | |
| Literature list | * Lantz-Deaton, C., & Golubeva, I. (2020). Intercultural Competence for College and University Students – A Global Guide for Employability and Social Change. Springer. * Deardoff, D. K. (2020). Developing Intercultural Competencies. Routledge. * Sure, M. (2017). Internationales Management – Grundlagen, Strategien und Konzepte. SpringerGabler. * Usunier, J. C. (2019). Intercultural Business Negotiations. Deal-Making or Relationship Building? Routledge. * Lewis, R. D. (2018). When Cultures Collide – Leading Across Cultures (4th ed.). John Murray Press. * Meyer, E. (2014). The Cultural Map - Breaking Through The Invisible Boundaries of Global Business. PublicAffairs. * Deresky, H. (2017). International Management – Managing Across Borders and Cultures (9th ed.). Pearson. | | |

### Business Communication

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Electives - Business |
| Academic year | 1, 2 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Improve the students’ ability to communicate fluently and effectively in professional situations. * Oral communication in the workplace, letters, mails, agendas and minutes and presentation slides * Course consists of lectures, individual and group work, to expand students’ vocabulary and improve fluency * Students are expected to prepare for lessons and participate actively in discussions and role-play situations.   The following situations / aspects will be covered:   * socializing / meeting and greeting / introductions / small talk * talking about your company * talking about your job * presentations * phone calls * mails * applications (letters & CV) * interview techniques * successful meetings * negotiating | | |
| Learning objectives | * Knowledge of professional English in a selection of relevant situations in both oral and written communication, i.e. oral presentations and interaction with customers, colleagues and business partners. * Knowledge of correct English grammar and syntax. * Knowledge of cross-cultural tips and rules for effective communication. * Ability to communicate effectively, formally and professionally in an international work environment. * Master oral & written challenges in general business situations. | | |
| Prerequisites | A minimum level of B2 in the placement test at Hof University (at the beginning of semester) is mandatory. | | |
| Literature list | Sweeney, Simon. 2003. English for Business Communication: a short course consisting of five modules : cultural diversity and socialising, telephoning, presentations, meetings and negotiations : Student's book. 2. ed. Cambridge: Cambridge University Press. Express Series, Cambridge. English for Specific Purposes - Business and Legal Professionals - Cambridge. Current articles from Business Spotlight, New York Times etc | | |

### International Communication and Project Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Electives - Business |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |

|  |  |
| --- | --- |
| Course content | * Smalltalk to build rapport or maintain a relationship * Preparing negotiating strategies * Dealing with the first offer * Intercultural pitfalls * Dealing with difficult counterparts and strategies * Bringing negotiations to a constructive conclusion * Further development of language and communication skills |
| Learning objectives | The students should be able to   * plan and conduct successful negotiations * reflect on strengths and weaknesses of their own performance in negotiations |
| Prerequisites | A minimum level of B2/B2+ in the placement test at Hof University (at the beginning of semester) is mandatory. |
| Literature list | * Powell, Mark, 2012: International Negotiations, CUP; ISBN: 97805211499212. * Lewicki, Roy et al., 2006: Negotiation, McGraw Hill; ISBN: 007-124460-3. * Malhotra, Deepak and Bazerman, Max, 2007: Negotiation Genius, Harvard Business School: ISBN: 978-0-553-38411-6 * Role-plays, case studies and other material. |

### International Negotiating Skills

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Electives - Business |
| Academic year | 3, graduate | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Negotiation fundamentals: How to prepare yourself for negotiations and identify your BATNA, Reservation Value, ZOPA * Interest-based negotiation approach * The investigative phase of negotiations * Cooperative vs. competitive negotiation approach * Claiming and creating value in negotiations * The psychology of negotiations: cognitive and emotional biases, blind spots in negotiations, strategies of influence, confronting lies and deception, dealing with irrationality, distrust, anger and threats * Negotiation across cultures – a framework for international business negotiations : * The importance of time, preparation and social networks * The cultural impact on the preparation, investigative, bargaining and agreement phase of negotiations * The impact of culture on negotiation strategies and tactics * How culture impacts buyer/seller interaction: Contract vs relationships * How to deal with complaints: Alternative dispute resolution options, various negotiation simulations designed to: develop professional cross-cultural negotiation skills and hone students’ English language proficiency and eloquence. * apply students’ analytical, cross-cultural and economic skills to discover best solutions to diverse managerial and business problems. | | |
| Learning objectives | Students are able to…   * adopt a broad array of effective negotiation strategies and tactics derived from negotiation theory and research. * apply these negotiation strategies and tactics in simulated negotiations to improve their negotiation skills. * develop an appreciation for the difference between value claiming and value creating, and learn how to “enlarge the pie”. * gain negotiation skills for distributing value and strengthening relationships. * identify and deal with hidden biases and other psychological factors in negotiations. * understand the cultural divergence and the importance of selecting and applying negotiation strategies effectively in an international business environment. * explore their own culturally based values and preferred negotiation styles. * refine interpersonal and group communication skills as they relate to conducting cross-cultural business negotiations. * apply negotiation strategies and tactics that lead to more effective ways of influencing and persuading others and that focus on building an agreement among various organizational stakeholders such as employees, suppliers, clients and business partners. * actively use their advanced English language skills to apply tools of persuasive communication to influence their counterparts when they have to present and defend their interests effectively. * apply language skills from effectively signposting and summarizing to ways how to move from confrontation to problem solving without impairing a working interpersonal relationship. * acquire a professional eloquence in English based on elaborate syntax and semantics to carry out negotiations successfully and use English as a tool to transform diverging interests into common goals. | | |
| Prerequisites | A minimum level of B2 is mandatory!  Only for sophisticated students from 3rd or 4th study year. | | |
| Literature list | * Pledger, Pat, 2008. English for Human Resources. * Sandford, George & Day, Jeremy, 2011. Cambridge English for Human Resources, CUP. Role-plays, case studies and other material. | | |

### Anglo-American Negotiations

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Area of specialization | Electives - Business |
| Academic year | 3, graduate | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Successful negotiations in a variety of contexts and situations. * Strategies for accurate analysis of negotiation situations. * Preparing negotiations and developing appropriate communicative strategies. * Awareness of and dealing with intercultural differences. * Strategies for dealing with difficult situations and dealing with difficult behaviour. * Recording results and analyzing preparation and results of negotiations. | | |
| Learning objectives | Students are able to   * Prepare themselves adequately for negotiations. * Recognise opportunities and set ambitious but achievable goals. * Successfully negotiate a salary in an interview situation. * Recognise and use assertive rather than aggressive language. * Recognise and counter hardball tactics. * Critically reflect on negotiation outcomes. | | |
| Prerequisites | A level of C1 in the placement test at Hof University (at the beginning of semester) is mandatory.  Only for sophisticated students from 3rd or 4th study year. | | |
| Literature list | Molhotra, D.: Negotiation Genius, Harvard Business School, 20082. Lewicki, R. et al.: Negotiation. McGraw Hill Higher Education., 5th ed., 2006 | | |

# Engineering Department

|  |  |  |
| --- | --- | --- |
|  | Course offered in | |
|  | Winter semester | Summer semester | ECTS credits |
| **Study program** |  |  |  |
| **Industrial Engineering International** |  |  |  |
| Applied Engineering Project |  | ☑ | 5 |
| **Innovative Textiles** |  |  |  |
| Computational Science for Practitioners |  |  |  |
| *Sales Communication* |  |  | 5 |
| *Analytical Chemistry* |  |  | 5 |
| Knitting Technology | ☑ |  | 5 |
| Quality Management | ☑ |  | 5 |
| Spinning Technology | ☑ |  | 5 |
| Advanced Coloration | ☑ |  | 5 |
| Future in Textile Printing | ☑ |  | 5 |
| Project Textile | ☑ |  | 5 |
| Research in textile sector | ☑ |  | 5 |
| Technical Textiles – Knitted Fabrics | ☑ |  | 5 |
| Textile Chemistry | ☑ |  | 5 |
| Textile Finishing | ☑ |  | 5 |
| Coating technologies for thin films | ☑ |  | 5 |
| *Basics of Materials Science* |  |  | 5 |
| *Project Management* |  |  | 5 |
| *Product Development* |  |  | 5 |
| Technical studies for knitted and woven structures |  | ☑ | 5 |
| Technology of nonwoven manufacturing |  | ☑ | 5 |
| Weaving Technology |  | ☑ | 5 |
| Technical Textiles – Woven Fabrics |  | ☑ | 5 |
| Textile Composite Materials |  | ☑ | 5 |
| Textile Coating and Industrial Fibres |  | ☑ | 5 |
| *Conditioning of Polymer Surfaces* |  |  | 5 |
| Circular Economy and Ressource Management |  | ☑ |  |
| **Textile Design** |  |  |  |
| Design Project | ☑ | ☑ | 15 |
| Product Design 2 International | ☑ |  | 5 |
| Weave Product Design | ☑ | ☑ | 5 |
| Print Product Design (only in combination with Print Technology) | ☑ | ☑ | 5 |
| Print Technology | ☑ | ☑ |
| Collection Design |  | ☑ | 10 |
| Manufacturing and Cutting Techniques |  | ☑ | 5 |
| *Digital Textile Systems* |  |  | 7,5 |
| Textile Future 1 | ☑ | ☑ | 7,5 |
| Experimental 3-Dimensional Design | ☑ | ☑ | 5 |
| **Engineering Sciences** |  |  |  |
| *Application-Oriented Programming for Engineers* |  |  | 5 |
| Object-Oriented Programming Techniques | ☑ | ☑ | 5 |
| Chemistry II | ☑ |  | 5 |
| Software Solutions for Engineers | ☑ |  | 6 |
| Entrepreneurship and Change Management | ☑ |  | 6 |
| Project & Case-Studies | ☑ | ☑ | 5 |
| Project Management | ☑ |  | 5 |
| Commercial Project Management | ☑ |  | 6 |
| Hardware-Oriented Robotics | ☑ |  | 5 |
| Fundamentals of technology in civil engineering | ☑ |  | 6 |
| Research Project Industry 4.0 | ☑ | ☑ | 5 |
| Computer Science for Engineers |  | ☑ | 5 |
| Investment and Financing |  | ☑ | 5 |
| Modern Methods of Digital Engineering | ☑ |  | 6 |
| **Sustainable Textiles** |  |  |  |
| Effect and Process Auxiliaries | ☑ |  | 6 |
| *Project Simulation* |  |  | 6 |
| Renewable Products for the Textile Industry | ☑ |  | 6 |
| Resource Efficient Application Technologies | ☑ |  | 6 |
| Sustainable Functionalisation and Surface Modification of Textiles | ☑ |  | 6 |
| Advanced Textile Chemistry |  | ☑ | 6 |
| Advanced Textile Production |  | ☑ | 6 |
| *Circular Economy / Certificates and Eco Labels* |  |  | 6 |
| *Sustainable Project Management* |  |  | 6 |
| Simulation and Optimization |  | ☑ | 6 |
| *Legal Framework and Digitalization of the Textile Value Chain* |  |  | 6 |
| **Sustainable Water Management and Engineering** |  |  |  |
| Smart Water | ☑ |  | 6 |
| Water and Society | ☑ |  | 3 |
| New Technologies in the Water Sector | ☑ |  | 3 |
| *Project work simulation (Water systems)* |  |  | 6 |
| R&D or Industrial Project | ☑ |  | 6 |
| Advanced Water treatment | ☑ |  | 6 |
| *Wastewater Discharge and Sewer network with structures* |  |  | 6 |
| International Water and Risk Management |  | ☑ | 6 |
| *Sustainability Management* |  |  | 6 |
| Water Quality and Water Cycle |  | ☑ | 6 |
| Risk Management in the Water Sector |  | ☑ | 6 |
| Urban Waste Water Cycle |  | ☑ | 6 |

## Industrial Engineering International

### Applied Engineering Project

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Industrial Engineering International |
| Academic year |  | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Project work  Different topics and professors  If you want to do a project, get in touch with the corresponding professor by email before March 31:     * Design: Professor Guderian * Mechanical Engineering: Professor Karall, Professor Honke, Professor Schlosser, Professor Meins * Simulation: Professor Honke * Materials Engineering: Professor Krumeich, Professor Meins, Professor Nase * Environmental Engineering: Professor Schmid, Professor Schlosser   Email addresses can be found via the search function on Hof University’s website. | | |
| Learning objectives |  | | |
| Prerequisites | None | | |
| Literature list | will be announced by the corresponding professor | | |

## Innovative Textiles (B.Eng.)

### Computational Science for Practitioners

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof/Münchberg | Study program | Innotex, Engineering Sciences (modular) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Basics of programming languages (variables, control structures, loops) Three typical digital tools in application to a typical engineering problem. Tools (examples): Scilab/Matlab,  R(/SPSS), Maple/Mathematica/..., Phython (with Jupyter notebooks)  Origin/GnuPlot/Minitab  typical engineering problems as application examples  Differential equations / boundary value problems  multidimensional optimization  scientific plots | | |
| Learning objectives | The students know the potential of modern digital tools in engineering applications. They are able to transform tasks from their  field of work into standard problems that can be solved with the tools, solve them with computer support and interpret the results  with regard to the original problem. They are proficient in presenting measurement data or calculation results in scientific form. | | |
| Prerequisites | None | | |
| Literature list | will be announced during the first lesson. | | |

### *Sales Communication*

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in |  |
|  |  |  |  |
| Course content | * Basics of communication, communication models, videotaped powerpoint presentation with following group evaluation * Sales conversation, Introduction techniques, Situational Selling, Handling objections, Concluding techniques, Customer Relationship Management, Tele sales, Strategic selling, videotaped group presentation * basics of business communication | | |
| Learning objectives | Students   * know basics of communication related to behavior patterns * purposefully use them in different situations in conversations * know how to improve their own communication-techniques * create a professional presentation and speak to an audience | | |
| Prerequisites | None | | |
| Literature list | Literature list will be provided with the lecture slides. | | |

### *Analytical Chemistry*

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in |  |
|  |  |  |  |
| Course content | * review and introduction into the basics of quantitative inorganic chemistry * execution of stoichiometric calculations * theoretical background and practical exercises of selected analytical methods * practical course for individual realizing chemical analysis in the lab | | |
| Learning objectives | * comprehension of fundamental chemical concepts of analytical chemistry * skills in practical realization of chemical analyses in the lab * ability to apply solution strategies to practical problems | | |
| Prerequisites | None | | |
| Literature list | * J. Kenkel: Analytical Chemistry for Technicans, CRC Press, ISBN: 978-1-4398-8105-7 * Kellner, Mermet, Otto: Analytical Chemistry, Wiley-VCH, ISBN: 3-527-30590-4 * Jander, Blasius: Lehrbuch der analytischen...; ISBN: 3-7776-13886; 2006 * Hillebrand: Stöchiometrie * Schwedt: Analytische Chemie * [www.freebookcentre.net/Chemistry/Analytical-Chemistry-Books.html](https://www.hof-university.com/external-link.html?no_cache=1&ref=http%3A%2F%2Fwww.freebookcentre.net%2FChemistry%2FAnalytical-Chemistry-Books.html&target=_self) * [www.asdlib.org/onlineArticles/ecourseware/Text\_Files.html](https://www.hof-university.com/external-link.html?no_cache=1&ref=http%3A%2F%2Fwww.asdlib.org%2FonlineArticles%2Fecourseware%2FText_Files.html&target=_self) | | |

### Knitting Technology

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * in-depth knowledge of the construction styles, devices, technological adjustments and products of flat and circular knitting machines as well as flat warp knitting machines * notations and their presentation, methods and devices for sample preparation, sample and control programs, manufacturing instructions, process controlling, manufacturing and quality control, error and notation analysis will be presented * practical attempts on weft- and warp knitting machines | | |
| Learning objectives | Students   * are familiar with the in-depth knowledge of the construction, function and possibilities of sampling of weft and warp knitting machines. * have an overview of the manufacturing processes, sample preparation, product design and quality control. * possess the ability for the presentation of fabric notations and fabric analysis. | | |
| Prerequisites | knowledge in methods of textile production | | |
| Literature list | * Lector notes "knitting technology" * David J. Spencer: knitting technology, Weber, K. P. * Weber, M.: Wirkerei und Strickerei - Technologische und Bindungstechnische Grundlagen (ISBN 3-87150-792-X) | | |

### Quality Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * display of different quality philosophies * execution of quality planning, product realization, quality audit and improvement * quality costs; methods and tools for continuous quality assurance * statistical process control * quality assurance systems based on DIN EN ISO 9000 ff. * case studies | | |
| Learning objectives | Students   * gain knowledge about the philosophy and basic tools of quality-management * are able to make use of special tools for production design and control | | |
| Prerequisites | None | | |
| Literature list | * Pfeifer, T: Quality Management, 3rd edition, Carl Hanser Verlag München Wien, 2002 * Pfeifer ,T.: Qualitätsmanagement, 3. Auflage, Carl Hanser Verlag München Wien, 2001 | | |

### Spinning Technology

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * technologies of yarn production * planning of spinning mills * lab work in the spinning lab | | |
| Learning objectives | Students   * know the technologies of spinning * construct spinning mills * have practical routine in spinning lab | | |
| Prerequisites | None | | |
| Literature list | None | | |

### Advanced Coloration

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * overview concerning dyeing processes * chemistry of textile auxiliaries and dyestuffs * reduction of waste water * energy saving dyeing methods | | |
| Learning objectives | Students are able to   * concern for environmental friendly textile dyeing processes. * apply solution strategies to practical problems. | | |
| Prerequisites | None | | |
| Literature list | * A.D. Broadbent: Basic Principles of Textile Coloration * J.R. Aspland: Textile wate and Coloration * H.K. Rouette: Handbuch der Textilveredlung. 2 Bände | | |

### Future in Textile Printing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * overview Textile printing * knowledge concerning auxiliaries, dyestuffs, thickener and binder * overview textile printing processes * overview after-treating processes | | |
| Learning objectives | Theoretical and practical knowledge concerning textile printing | | |
| Prerequisites | None | | |
| Literature list | Miles, L.W.C.: Textile printing. SDC | | |

### Project Textile

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Analysis of a current situation (product, method, business model) in the textile industry * Definition of problem areas of the current situation and presumptions for a further development of the respective project topic as well as suggestions on a future procedure * Analysis of simple laboratory tests on the particular project topic | | |
| Learning objectives | Students are able to work on an innovative subject of the textile industry under consideration of technical, economic and ecological requirements independently | | |
| Prerequisites | None | | |
| Literature list | Must be created by the students | | |

### Research in textile sector

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Teaching of basic knowledge for conducting a patent search.  Independent conducting of a literature and patent search in the field of textiles, preferably nonwovens or woven materials.  Preparation of a written report. | | |
| Learning objectives | Independent preparation of a combined search from literature and patent database in the textile field. | | |
| Prerequisites | None | | |
| Literature list |
|  |

### Technical Textiles – Knitted Fabrics

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | The lecture conveys in-depth knowledge of the correlation between construction, structure and properties of technical knitted fabrics. Particularly the influence of the modification of different manufacturing processes on the properties of technical knitted fabrics is outlined. Divided into different clusters such as netting structures, grid structures, spacer fabrics, automotive fabrics and textile reinforcement structures for composites product examples will be developed. The parameters fibre, patterning and process technology will be varied, depending on operational requirements of typical technical knitted fabrics. Particular emphasis is placed on sustainability and saving resources. Using this knowledge detailed production calculations are carried out and different types of production methods will be critically compared. The theoretical knowledge of the lecture will be deepened by practical attempts on weft- and warp knitting machines in the lab. | | |
| Learning objectives | Students are able to   * realize the correlation between construction, structure and properties of technical knitted fabrics. * to deduce the production parameters as required due to the required properties of the knitted fabric * develop technical knitted fabrics based on specific requirement profiles to conclude the manufacturing process and finally evaluate them critically. | | |
| Prerequisites | previous participation on the module " Knitting Technology” | | |
| Literature list | Lector notes "technical textiles - knitted fabrics" | | |

### Textile Chemistry

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Chemistry of important textile substrates * Overview of the process of refining textiles and the required machinery, equipment, and chemistry * Introduction into structures, synthesis and properties of the most important textile dye classes and their application | | |
| Learning objectives | * Chemistry of important textile substrates * Overview of the process of refining textiles and the required machinery, equipment, and chemistry * Introduction into structures, synthesis and properties of the most important textile dye classes and their application. | | |
| Prerequisites | None | | |
| Literature list | * Skript + Formula collection: Textile Chemistry * Experiment descriptions/instructions textile chemistry * [www.vci.de/downloads-vci/textilchemie-textheft.pdf](https://www.hof-university.com/external-link.html?no_cache=1&ref=https%3A%2F%2Fwww.vci.de%2Fdownloads-vci%2Ftextilchemie-textheft.pdf&target=_self) * Beyer/Walter; Lehrbuch der organischen Chemie; S. Hirzel Verlag; ISBN: 9783777612218 * Beyer/Walter; Organic Chemistry: A Comprehensive Degree Text and Source Book; Horwood Series Chemical Science; ISBN-13: 978-18985633728 * Rys/Zollinger; Farbstoffchemie; ISBN: 3-527-25964-3 * Hunger; Industrial Dyes; 2003; Wiley VCH; ISBN: 3-527-30426-6 | | |

### Textile Finishing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Mechanical textile finishing for pieces-goods * Structure and functioning of the machinery * Processing conditions for certain effects * Chemical textile finishing for piece-goods. * Processes, finishing agents and their reactions with application conditions * Optimizations, interdependent effect interference; environmental friendliness * Conducting and evaluation of relevant treatments * Finishing methods: methods of effect and utility value validation, evaluation of errors and environmental issues. | | |
| Learning objectives | theoretical and practical knowledge in textile finishing | | |
| Prerequisites | knowledge in textile dying | | |
| Literature list | * Rouette, H.K.: Handbuch der Textilveredlung Technologie, Verfahren und Maschinen. I. und II.Band Frankfurt: Deutscher Fachverlag * Schindler, W.D./Hauser, P.J.: Chemical finishing of textiles, Woodhead publishing | | |

### Coating technologies for thin films

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * thin films textile substrates * electrical properties of conductive coatings, sensors, planning of experiments and evaluation of results | | |
| Learning objectives | Students are able to   * analyze and solve a given technical problem in the field of coating and measurement technologies has been * acquire techniques and knowledge for the production and qualification of structures and thin films for special applications. | | |
| Prerequisites |  | | |
| Literature list | * K. W. Mertz, H. A. Jehn, Praxishandbuch moderne Beschichtungen, Karl Hanser Verlag München Wien (2001) * K. P. Müller Praktische Oberflächentechnik, vieweg, Braunschweig (2003) * D. Pritzlaff, V. Lauttner, CVD-Beschichtungstechnik, Leuze Verlag, Saulgau (1997) * H. Hofmann, J. Spindler, Verfahren der Oberflächentechnik, Fachbuchverlag Leipzig, (2004) * M. Wutz, Handbuch Vakuumtechnik, vieweg, Braunschweig (2006) * R. Hippler et al., Low Temperature Plasmas, Wiley-VCH, 2008 * D. M. Mattox, Handbook of Physical Vapor Deposition (PVD) Processing, Noyes Publications, 1998 | | |

### *Basics of Materials Science*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Innovative Textiles (B.Eng.)* |
| *Academic year* | *2* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *105* |
| *ECTS* | *5* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | * *Different types of materials (metals, polymers, ceramics) and their specific applications.* * *Basics (groups of materials, general properties, bonding types)* * *General structure of crystalline materials (unit cell, types of crystal lattices, Miller indices, packing density, polymorphism, distance between lattice planes, texture, crystal defects, overview about chemical and physical structure, Braggs law, x-ray defraction)* * *Phase transformation (alloys, calculation of the true composition of a structure, eutectic, eutectoid ...)* * *Thermal activated processes (diffusion, Fick's law, heat transfer mechanism, calculation of concentration gradients)* * *Mechanical properties (elastic and plastic deformation, modulus of elasticity, shear modulus, modulus of rigidity, Poisson's ratio, toughness, stress-strain-diagram, true stress-strain- diagram)* * *Basics of material testing (testing of hardness, advantages of different hardness tests and calculation of hardness values, tensile test, compression test, bending test, impact bending test, calculation of toughness values, instrumented tests)* * *Physical and chemical properties (electric properties, superconducters, thermal properties, advanced thermal properties, corrosion)* * *Metals (ferrous materials, annealing, non-ferrous materials) (production of iron and steel, indication of steel, processing of iron, primary and secondary structure, steel, cast iron, heavy metals, light metals, stainless steel vs. high quality steel, iron-carbon-diagram, meta- stable, stable, ferrite, austenite, cementite, perlite, ledeburite, martensite, annealing of steel etc.)* * *Polymers (chemical and physical structure of polymers, molar mass, molar mass distribution, processing of polymers, bio-polymers, viscoelasticity, calculation of relaxation time constant)* * *Ceramic and glass* * *Composite materials* * *Textile materials (innovations)* | | |
| *Learning objectives* | *Students*   * *know about configuration and structure of materials and understanding of their properties and applications* * *know the advantages and disadvantages of the different groups of materials (metals, ceramics, polymers and composites* * *have basic knowledge of materials testing and characterization.* | | |
| *Prerequisites* | *None* | | |
| *Literature list* | * *W. Schatt; Werkstoffe, Dt. Verlag für Grundstoffind.* * *E. Hornbogen; Werkstoffe, Springer* * *H.J. Bargel/G.Schulze; Werkstoffkunde, Springer* * *W. Weißbach; Werkstoffkunde und Werkstoffpüfung, Vieweg +Teuber Verlag* | | |

### *Project Management*

*Primarily for Innovative Textiles students!*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Innovative Textiles (B.Eng.)* |
| *Academic year* | *2* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *105* |
| *ECTS* | *5* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *The students start learning definitions and methods of project management. The following topics are covered: Project Management Framework; Processes of PM; Integration Management; Scope, Time and Cost Management; Quality, Communications, Risk and Procurement management in Projects, Work in team, Managing conflicts, Presentations, Customer care. Soft-skills like team orientated working, techniques of behavior, conflict ability, service oriented thinking, networking and contact management, as well as time and self-management are part of the class. Along with the lecture, the students will apply their knowledge in doing small projects.* | | |
| *Learning objectives* | *Students learn to work in teams and how to use the basic methods of Project and Personal Management. The methods will be presented and practiced in most possible practical way. The students are able to either manage a small project by themselves or become a useful member of a project team.* | | |
| *Prerequisites* | *None* | | |
| *Literature list* | * *Burghardt M. (2008): Projektmanagement: Leitfaden für die Planung, Überwachung und Steuerung von Entwicklungsprojekten; 8. Auflage; Siemens Verlag (ISBN-10: 3895783994) GPM Deutsche Gesellschaft für Projektmanagement e.V. (2004): Projektmanagement Fachmann; 8. Auflage; RKW-Verlag (ISBN-10: 3926984570)* * *Patzak/Rattay (2014): Projektmanagement: Leitfaden zum Managment von Projekten, Projektportfolios und projektorientierten Unternehmen, Linde Verlag GmbH, 6. Auflage (ISBN-10: 3714302662)* * *Magerkurth (2011): Hürden in Großprojekten der öffentlichen Verwaltung, Berlin-Bundesverwaltungsamt* * *DIN 69900 (2009): Projektmanagment-Netzplantechnik, Beschreibungen und Begriffe, Verlag GmbH (2009)* | | |

### *Product Development*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Innovative Textiles (B.Eng.)* |
| *Academic year* | *2* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *105* |
| *ECTS* | *5* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *Based on industry-standard process flows, the basics of project management are taught on product development. These include project planning (time and budget planning), brainstorming, literature research and SWOT analysis, milestone planning and presentation, iterative development according to the success triangle, market introduction concept, presentation of results* | | |
| *Learning objectives* | *The students understand how product development is done in the industry and are able to use appropriate tools and methods. They know the documents, which are used during the stages of development. They are able to do their job using or creating such documents. As an effect of the seminar paper/seminar project they are trained on some methods of development work. Because they did their seminar paper/project as a group, they have recognized the value of teamwork, they are able to share their results with others and are able to contribute their part to the whole job. They do this by using the applicable methods and tools and can evaluate and adopt other methods, e.g. which are mentioned in literature. When designing the items of a technical system, the students obey the rules of good design practice, in order that the items will fulfill the needs of manufacturing and function. The student have also an overview of the safety requirements, which technical products must meet.* | | |
| *Prerequisites* | *Mechanical Design/CAD* | | |
| *Literature list* | *Lecture slides and quoted literature* | | |

### Technical studies for knitted and woven structures

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Part woven fabric: Knowledge of methods for pattern development for dobby and jacquard woven fabrics. Understanding of the relations between technology, material and designers creativity. Capability and professional skills to develop suited patterns for dobby and jacquard fabric under given conditions.  Part knitted fabric: Symbolic notation and analysis of weft knitted fabrics such as single-face fabrics (RL), double-face fabrics (RR), interlock fabrics (RRG) and purl knitted fabrics (LL), as well as warp knitted fabrics such as single-face fabrics (RL) and double-face-fabrics (RR). Examples of simple and combined notations used for sampling and styling of knitted fabrics. Survey of modern knitting technology, including computer aided sampling. | | |
| Learning objectives | Part woven fabric: Knowledge of methods for pattern development for dobby and jacquard woven fabrics. Understanding of the relations between technology, material and designers creativity. Capability and professional skills to develop suited patterns for dobby and jacquard fabric under given conditions.  Part knitted fabric: Knowledge of the possibilities of patterning knitted fabrics. Survey of typical simple and combined notations and is functions. Knowledge of the technology of Jacquard patterning for flatbed knitting machines, circular knitting machines as well as warp knitting machines. | | |
| Prerequisites | none | | |
| Literature list | Kienbaum, Martin: Bindungstechnik der Gewebe, Skript. Teil Maschenstoffe: Skript "Bindungstechnik Masche", Weber, K. P.  Weber, M.: Wirkerei und Strickerei - Technologische und Bindungstechnische Grundlagen (ISBN 3-87150-792-X)" | | |

### Technology of nonwoven manufacturing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | In the introduction, the most important basic concepts and definitions for nonwovens will be conveyed. Further advantages, limitations and distinctions to other textile fabric forming technologies will be discussed.  In the main part, the students first learn which textile fiber materials based on their properties, can be used for the nonwoven production. Subsequently the lectures convey in-depth knowledge of the web forming process (production of spunbond nonwovens, hydrodynamic web formation, aerodynamic web formation, mechanical web formation), the web bonding process (bonding by friction or using thermal and chemical bonding) and the finishing process of nonwovens.  Finally, properties and applications of nonwovens are taught and demonstrated with practical examples and applications and will be deepened additionally. The theoretical knowledge of the lecture will be deepened and consolidated by several practical attempts on the machines in the laboratory. | | |
| Learning objectives | The students are familiar with the in-depth knowledge of the construction, function and setting possibilities of machines for the production of nonwovens. The students are well versed in the fundamental manufacturing processes, methods for product design, and methods for quality control. They possess the ability to apply this knowledge to design and analysis of nonwoven fabrics and are able to assign nonwoven fabrics to different applications. | | |
| Prerequisites | none | | |
| Literature list | Skript „Technologie der Vliesherstellung“, Hilmar Fuchs und Wilhelm Albrecht: „Vliesstoffe: Rohstoffe, Herstellung, Anwendung, Eigenschaften, Prüfung“ | | |

### Weaving Technology

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * After a short introduction and repetition of prerequisite basic knowledge for the subject “Weaving Technology”, there are two main parts, weaving preparation and analysis of woven fabrics. * Weaving preparation, is divided into three consecutive parts: yarn preparation, warp preparation and warp set-up. Towards the end of the term the analysis of woven fabrics takes place. * All topics are complemented by relevant calculations. | | |
| Learning objectives | Students are able to   * acquire knowledge about patterns for dobby and jacquard woven fabrics and the corresponding technologies as well as understanding the interdependence between machines and used materials. * carry out the necessary calculations in weaving. Survey of jacquard weaving technologies. * have Knowledge and professional skills for the transformation of jacquard pattern designs into woven fabrics as well as the relation between jacquard head, tying up and pattern. | | |
| Prerequisites | Textile-production basics | | |
| Literature list | Lecture slides | | |

### Technical Textiles – Woven Fabrics

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Application of the knowledge in weaving technology acquired in the previous course of studies concerning the design and production of technical fabrics and products made of it. | | |
| Learning objectives | Students are able to   * realize the correlation between construction, structure and properties of technical woven fabrics. They have the ability, to * deduce the production parameters due to the required properties of the woven fabric * develop technical woven fabrics based on specific requirement profiles to conclude the manufacturing process and finally evaluate them critically. | | |
| Prerequisites | None | | |
| Literature list | Will be provided with the lecture slides | | |

### Textile Composite Materials

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | The various types of composites, such as layer, fiber, particle and penetration compounds, as well as various matrix systems (metal, ceramics, polymer) an reinforcing phases, are mediated, while special cases such as various carbon materials are also discussed. Furthermore, the systematic learning of polyreactions, polymerization techniques, polymer structures and their influence on the chemical and physical properties of polymers is mediated. Typical functional groups, the influence of molecular weights on the properties of polymers and the most important thermal, chemical and physical methods of investigation are given. This results in the derivation of important properties for polymers as matrix systems in fiber composite materials. Furthermore, commercially important fiber types are discussed and the specifics with regard to the adhesion between the polymer matrix and the fibers are explained in detail. Based on this prior knowledge, the properties of commercially important fiber composite materials are discussed. The modern processes for producing fiber composite materials such as injection molding compounding are also discussed. | | |
| Learning objectives | The basic learning of various types of composites, such as layer, fiber, particle and penetration compounds, as well as various matrix systems (metal, ceramic, polymer) and reinforcing phases. Systematic learning of the properties of matrix systems in interaction with different reinforcing systems, in particular taking account of the force transmission and the adhesion between matrix and reinforcing phases. Furthermore, the students are taught commercial and specific applications and manufacturing processes of textile composites. The students are therefore able to see the previously acquired textile knowledge in connection with the production, processing and application of composite materials. Thus, the students are able to select matrix and reinforcement phases for a targeted application or to assess the suitability of interconnection systems for a required application | | |
| Prerequisites | None | | |
| Literature list | * Polymer Matrix Composites and Technology: Ru-Min Wang Shui-Rong Zheng Yujun Zheng; ISBN: 9780857092212; Elsevier; 2011; * Composite Materials Handbook Volume 1: Guidelines for Characterization of Structural Materials ISBN of 978-0-7680-7811-4; Army Research Laboratory, Weapons and Materials Research Directorate, 2002; * Composite Materials Handbook Volume 2: Polymer Matrix Composites: Materials Properties; ISBN of 978-0-7680-7828-2; Army Research Laboratory, Weapons and Materials Research Directorate, 2002; * Composite Materials Handbook Volume 3: Polymer Matrix Composites: Materials Usage, Design & Analysis; ISBN of 978-0-7680-7813-8; Army Research Laboratory, Weapons and Materials Research Directorate, 2002; * Polymer Chemistry Properties and Application: Peacock, Andrew J. and Calhoun, Allison; ISBN: 978-3-446-22283-0; Hanser; 2006 | | |

### Textile Coating and Industrial Fibres

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Molecular and supermolecular structure, physical and chemical properties, special investigation methods. | | |
| Learning objectives | The students know, understand and explain the structure of high-performance fibers and get an overview of their preparation and their use as industrial textiles and turn this into possibilities for further processing and use. | | |
| Prerequisites | None | | |
| Literature list | A.Giesmann: Textile Coating. Springer Verlag -Articles from ULLMANN'S Encyclopedia of Industrial Chemistry | | |

### *Conditioning of Polymer Surfaces (block course)*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Innovative Textiles (B.Eng.)* |
| *Academic year* | *3* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *105* |
| *ECTS* | *5* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *In addition to the structure and properties of plastic surfaces on different length scales, the basics for the adhesion of special substances such as paints, varnishes, metals, special hydrophilic and hydrophobic coatings or adhesives on plastic substrates are taught. This is done with the help of various theories of adhesion, but essentially with the help of the surface tension of the substances involved in the adhesive bond. In order to improve the adhesion between the adhesion partners, in particular the disperse and the polar part of the surface tension are explained and calculation and measurement methods are shown. In the practical course, the methods presented are verified using suitable measurement methods. The further modification of surfaces is explained on the basis of various finishing processes and their chemistry.* | | |
| *Learning objectives* | *The students obtain a deep knowledge about the modification of plastic surfaces. They learn to calculate the design of the most important tools for the modifications of surfaces with special mathematical tools.* | | |
| *Prerequisites* | *Basic studies completed* | | |
| *Literature list* | *Colloid Interface Science, 59, 398 (1977)*   * *Neumann A. W. et. Al.; Journal Colloid Interface Science, 49, 291(1974)* * *Ward, C. A., and Neumann, A. W.; Journal Colloid Interface Science, 49, 291(1974)* * *Li, D., Gaydos, J. and Neumann, A. W; Langmuir 4, 884 (1988* * *Wu, S.; Adhäsion, 5, 39(1973)* | | |

### Circular Economy and Ressource Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Innovative Textiles (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | General Principles of Circular Economy and Resource Management:  - Linear versus circular economy  - Circular business models  - Identification and prioritization of value drivers towards circular economy  - Sustainable Development Goals (SDGs)  - Circular operation, products & services, culture & organization  - Circular ecosystems  Applied Circular Economy and Resource Management for Engineering  - Presentation of (sustainable) applications of the polymer processing industry (e.g. packaging industry, automotive industry,  prototyping industry, etc.)  - Focus on the understanding of the structure-property-relationship behind different applications  - Aspects of polymer chemistry and polymer physics (polymer chain architecture, chain mobility, interdiffusion kinetics, etc.) | | |
| Learning objectives | The module is divided into the two parts "General Principles of Circular Economy and Resource Management" and "Applied Circular  Economy and Resource Management for Engineering".G eneral Principles of Circular Economy and Resource Management:  1.1 The students understand the concepts of the transformation from linear to circular economy and the connection of circular  economy with the 17 Sustainable Development Goals (SDGs).  1.1 By understanding environmental impacts and efficient resource consumption, the students can assess the suitability of circular  business models.  2.3 The students are able to analyze current research topics in this area.  4.3 The students can compare ways to create circular value and are able to discuss measures to make a circular impact.  5.1 The students are able to understand English literature in the context of the subject area. A pplied Circular Economy and  Resource Management for Engineering:  1.1 The students understand the relation between supermolecular structure and the final product properties.  1.1 The students are able to estimate, which set of processing parameters is neccessary to obtain a defined physical structure.  2.2 Following the main goal of the lecture, the students should be able to figure out the appropriate and sustainable material and/or  material combination as well as the appropriate process and/or set of processing parameters for a given set of final product properties. | | |
| Prerequisites | none | | |
| Literature list | S. Achilias D, editor. Waste Material Recycling in the Circular Economy - Challenges and Developments, IntechOpen, 2022. P . Lacy,  The Circular Economy Handbook - Realizing the Circular Advantage, Springer Nature Limited, 2020. Further in-depth literature will be  announced in the lecture. | | |

## Textile Design (B.A.)

### Design Project

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Textile Design (B.A.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 15 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | Practical related project with individual choice of the subject, within the whole range of classical textile techniques, as well as other innovative techniques. Concept development, design work, innovative product development, methods of presentation. | | |
| Learning objectives | The module puts emphasis on increasing the students’ individual creative and technological based strengths by deepening their knowledge and skills in selected areas of textile production and processing techniques. Students work self-reliantly on concepts for complex design projects, from planning stage, via design work, to the final realization, as well as the presentation of the results. The students exercise presentation techniques (verbal and visual) by showing their work within their group of fellow students and they acquire competences in finding criteria to judge other people’s work. | | |
| Prerequisites | Elementary knowledge of design principles | | |
| Literature list | Skript Designprojekt M.Barta, U.Lauter, A. Oswald, D. Spörl, M. Ziegenthaler | | |

### Product Design 2 International

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Textile Design(B.A.) |
| Academic year | 3-4 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 277 |
| ECTS | 10 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Customer-oriented design as a combination of components aesthetics, technology and market. * Studies, to understand the visual quality of products, using means like semantical differential and product-analysis. * Market segmentation, product development according to specific requirements of customers, market analysis, trend analysis. * Design and development cooperation with selected textile companies or wholesalers. | | |
| Learning objectives | Students are able to   * define, analyze and structure sales markets for selected product groups. * describe and analyze the aesthetic and conceptual orientation of external cooperation partners. * transfer the acquired technological knowledge and design competencies to practice projects in a problem-spreading manner and prove flexibility in adapting to external specifications. demonstrate the ability to structure design projects independently, to work in a given timeframe, and to present the results verbally and as a portfolio. | | |
| Prerequisites | None | | |
| Literature list | * Marion Halfmann: Zielgruppen im Konsumentenmarketing, Springer Gabler 2014 * Hermann Freter: Markt- und Kundensegmentierung, Kohlhammer Edition Marketing 2008 | | |

### Weave Product Design

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Textile Design(B.A.) |
| Academic year | 2 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 127 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Practical use of different weaving pattern. * Meaningful possible combinations of the design factors color, texture and material. * Initial experience in the production of experimental and application-oriented fabrics. * Study of the interaction modes of the design factors for surface and shape. | | |
| Learning objectives | * Knowledge of the design options and their functions in the manufacture of fabrics. * Experience in the combination and modification of the weaving pattern. * Experimental developments in fabric technology. | | |
| Prerequisites | None | | |
| Literature list | Lecture slides | | |

### Print Product Design

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Textile Design(B.A.) |
| Academic year | 2 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 127 |
| ECTS | 5 (with Print Tech.) | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Influence of the print design template production by the different techniques. * Investigation of the relationship between technology, design and media. * Planning and implementation of print-specific design tasks for screen and digital printing. * Experimental methods in the production of novel textile surfaces by chemical and physical action. | | |
| Learning objectives | * Knowledge of print-specific design factors with experimental and traditional applications for screen and digital printing. * Skills in the planning and execution of design tasks in the field of textile printing. * New development of textile surfaces by the combination of printing and processing techniques. | | |
| Prerequisites | **Only in combination with module “Print Technology”** | | |
| Literature list | * Kate Wells: Textilien färben und bedrucken * Andreas Rombold: Siebdruck und Serigraphie | | |

### Print Technology

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Textile Design(B.A.) |
| Academic year | 2 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 37 |
| ECTS | 5 (with Print Prod. Design) | Course offered in | Winter Semester  Summer semester |
|  |  |  |  |
| Course content | * Overview of innovative printing and coating technologies. * Useful attribution of printing basics and printing technologies. * Understanding of the interaction of technology and substrate chemistry. * Combination of different printing technologies. | | |
| Learning objectives | * Getting to know the different printing and coating. * Safety in the application of substrate chemistry. * Knowledge of the possible combinations of printing technologies. | | |
|  |  | | |
| Prerequisites | None | | |
| Literature list | Siebdruckhandbuch Sefar AG / Rezeptur | | |

### Collection Design

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Textile Design (B.A.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 255 |
| ECTS | 10 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * To become acquainted with pattern-construction systems, basic pattern dress/Shirt, trousers, jacket. * Creation of basic patterns and fitting models based on individual body dimensions. * Forming methods and their deployment in apparel * Experimental pattern creation and realisation of prototypes. * Transfer of strategies for the creation of concepts for collections. * Supervision of the realisation of a fashion collection, brainstorming, conceptual design, material determination, implementation and documentation. | | |
| Learning objectives | * The construction of basic patterns based on individual dimensions. * The development of independent pattern ideas and their implementation in the product. * Conception, planning, implementation and documentation of a fashion collection on a freely selectable topic. | | |
| Prerequisites | None | | |
| Literature list | * Skript Kollektionsgestaltung/Schnitttechnik * Jansen/Rüdiger - Systemschnitt 1, ISBN 3-7949-0684-5 * Jansen/Rüdiger - Systemschnitt 2, ISBN 3-7949-0686-1 * Jansen/Rüdiger - SchnittArt, ISBN 978-3-7949-0776-2 * Guido Hofenbitzer - Bekleidung/Schnittkonstruktion für Damenmode, ISBN 978-3-8085-6236-9 * Tomoko Nakamichi - Pattern Magic, ISBN 978-1-85669-705-7 * Tomoko Nakamichi - Pattern Magic 2, ISBN 978-1-85669-706-4 | | |

### Manufacturing and Cutting Techniques

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | | Campus | Münchberg | Study program | Textile Design (B.A.) | | Academic year | 3-4 | Attendance (in hours) | 45 | | Semester hours per week | 4 | Self study (in hours) | 45 | | ECTS | 5 | Course offered in | Summer semester | |  |  |  |  | | Course content | * To become acquainted with pattern-construction systems, basic pattern dress/shirt, trousers. * Creation of basic patterns and fitting models based on individual body dimensions. * Forming methods and their deployment in apparel Basic techniques and methods of making apparel. * Cutting, ironing, fixing, stitching and sewing, machinery. * Pocket- collar- and zipper processing. * Experimental methods taking into account material, pattern and function. * The techniques are tested and elaborated in project tasks. | | | | Learning objectives | * The construction of basic patterns on the basis of individual dimensions. Applying methods and techniques of confection in prototypes. * The ability to apply product-related techniques in the design process. * The students know the basic sewing machines and seam types, their function and handling. | | | | Prerequisites | None | | | | Literature list | Skript Konfektionstechnik | | | |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  | | |
|  |  | | |
|  |  | | |

### *Digital Textile Systems*

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Textile Design (B.A.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 195 |
| ECTS | 7,5 | Course offered in |  |
|  |  |  |  |
| Course content | * Knowledge about the functionality and possibilities of the university`s different textile machines. * Structure and handling of the CAD-software “EAT” to the end that designs can be implemented on the jacquard looms of the university. * Basic and further skills of weaving techniques. * Creating designs and implement them on the jacquard- and dobby looms in different qualities. * Experimental textile orientated studies in the rage of knitting, weaving and printing. | | |
| Learning objectives | * Basic and further skills in the rage of creating jacquard patterns with the help of the jacquard software “EAT”. * Knowledge about the different production processes in the rage of weaving. * Creating and implement a conceptual work by having regard to different points of different textile systems and tecniques. | | |
| Prerequisites | None | | |
| Literature list | Skript | | |

### Textile Future 1

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Textile Design (B.A.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 180 |
| ECTS | 7.5 | Course offered in | Winter semester  Summer Semester |
|  |  |  |  |
| Course content | * Examination of Brands, Concepts, Products and Product Categories in the fields of Sportswear * Lifestyle (Shoes, Textiles, Accessories, etc.) * focusing on Material, Design, Economy and Ecology | | |
| Learning objectives | Students developing skills and knowledge in formulation and implementation of Designs in complex surroundings. | | |
| Prerequisites | None | | |
| Literature list |  | | |

### Experimental 3-Dimensional Design

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Textile Design (B.A.) |
| Academic year | 1-4 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer Semester |
|  |  |  |  |
| Course content | Materials are wrought to three-dimensional surfaces by traditional as well as experimental techniques. Technics and material, so far belonging together, are taken apart and places in new contexts, you can find your own design objects. We work in different category groups like interior, jewelry, fashion and the design of textile objects. In preparation for fashion design we work in an experimental way with traditional textile techniques. The design-tasks contain experimental sketches and the design of function-free clothing by esthetic aspects. To do your own materials, there are 1. University labs, for example for laser cut, print methods 2. cooperation with companies in our region | | |
| Learning objectives | The ability to develop textile designs by experimental means. | | |
| Prerequisites | None | | |
| Literature list | \*Eimert, Dorothea: PAPER ART, Wienand 1994\*Koda, Harold: ETREME BEAUTY, The Metropolitan Museum of Art, New York, 2001\*Leitner, Christina: Papiertextilien, Haupt VerlagMellgren, Jette: Flechten mit Naturmaterialien, frechverlag 2011Yamada, Sadami und Ito, Kiyotada: HANDBUCH DER PAPIERKUNST, Arena 1968 \*Poschardt Ulf - Anpassen, Rogner & Bernhard \*Heckel, Ernst - Kunstformen der Natur, Prestel | | |

## Engineering Sciences

### *Application-Oriented Programming for Engineers*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Engineering sciences* |
| *Academic year* | *1* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *105* |
| *ECTS* | *5* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *Will be announced* | | |
| *Learning objectives* |  | | |
| *Prerequisites* | *None* | | |
| *Literature list* | *will be announced during the first lesson.* | | |
|  |  | | |

### Object-Oriented Programming Techniques

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Elective |
| Academic year | 1-3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester, winter semester |
|  |  |  |  |
| Course content | * To manage the program flow the course teaches control structures (branches and loops). * The lecture introduces object-oriented programming with classes and objects, which requires constructors and methods. More characteristics of object orientation like inheritance, abstract classes, polymorphism, and interfaces are covered. * Furthermore, I/O functionality, file handling, exception handling and utility classes are important to coding. | | |

### Chemistry II

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof/Münchberg | Study program | Engineering sciences |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Structure, nomenclature and representation of organic compounds. Acid-base reaction of organic compounds. Set up reaction equations with reaction mechanism. Presentation of the functional groups and their most important reactions and connections. Discussion of the most important organic compounds and their function in the environment and materials engineering. Ideal gas equation. Phase diagrams of binary and ternary systems. Introduction to reaction kinetics. Discussion of the Arrhenius equation and its meaning. Presentation of measurement methods to determine the reaction order. Basics of Electrochemistry. Structure and function of a galvanic cell. How modern batteries work. | | |
| Learning objectives | Deriving the bonding conditions in organic compounds based on hybridization. Determination of partial charges and functional groups in organic compounds. Explain the main forms of isomerism. Describe acid-base catalyzed reactions. Determining the  type of reaction based on the reactants and the reaction conditions. Defining chiral molecules and stereocenters. Naming simple organic compounds. Draw simple organic structural formulas based on IUPAC nomenclature. Using the principle of resonance  stabilization to determine the stability of anionic, cationic and radical organic compounds. List of organic reactions with the most important reaction mechanisms. Distinguish which basic reactions alcohols, acids, amines and isocyanates can undergo and for which compounds and materials they are important. Assessing the reactivity of organic compounds. Predict where in an organic compound electrophilic or nucleophilic attack can occur. Defining the basic terms of physical chemistry. Outline of application examples for electrolytic processes. Representation of the phase diagrams of selected ternary systems. Explain the procedure of cryoscopy. Describe the rate laws for zero, first, second, and third order reactions. Describe experiments to determine the order of reactions. Explain the basics of electrochemistry. Describe how a galvanic cell works. Calculation of state functions based on the ideal gas equation. Calculate boiling and freezing point changes in heterogeneous systems. Calculation of electrical potentials based on the Nernst equation. Analyzing phase diagrams of binary systems. Assess the Arrhenius equation and its importance in molecular dynamics. Justify the different performance levels of batteries on the basis of electrochemistry. | | |
| Prerequisites | None | | |
| Literature list | 1) Winter, A., Organic Chemistry I for Dummies, 3.Auflage, Wiley 2005  2) Clayden, G., Organic Chemistry, 2.Auflage, Oxford 2001 | | |

### Software Solutions for Engineers

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Master Mech. Eng. (M. Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | -Usage of Scilab/Matlab/Python -Creation of mathematical scripts -Advanced methods of engineering design -Application-specific modeling -Import of CAD models and meshing -Application-oriented FEM -Linear and nonlinear statics -Element selection, boundary conditions, symmetry -Contact modeling -Evaluation of FEM analyses | | |
| Learning objectives | Students will be able to use various software solutions for modeling and programming mathematical problems, design and numerical simulation of components. -Ability to program calculations in Scilab/Matlab/Python. -Understanding of the use of various applications in the product development process. -Ability to develop a numerical simulation model -Ability to evaluate the FEM results This allows students to exchange information, ideas, problems and solutions with experts and lay people on a scientific level. They learn to exchange ideas on a scientific level and to use different applications in the context of a product development. This module provides the programming fundamentals for further study in the field of engineering. | | |
| Prerequisites | None | | |
| Literature list | - Nagar, Introduction to Scilab, Apress Berkeley - Nagar, Introduction to MATLAB for Engineers and Scientists, Apress Berkeley - Nagar, Introduction to Python for Engineers and Scientists, Apress Berkeley - Bathe, Finite-Elemente-Methoden, Springer - Schwarz, Methode der finiten Elemente, Vieweg + Teubner Verlag - Zienkiewicz, Methode der Finiten Elemente, Hanser latest editions  Further literature will be announced during lecture | | |

### Entrepreneurship and Change Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Master Internat. Project Management |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | 1. definitions of entrepreneurship and entrepreneurial functions,  2. regional, national and international statistics of start ups,  3. factors of success,  4. entrepreneurial finance and marketing,  5. types of setting up a business,  6. entrepreneurial counseling, life cycle and menaces of young enterprises,  7. business model generation  8. succession management  9. the role of culture in change management | | |
| Learning objectives | Students are able to 1. understand the economic impact of start ups 2. classify the regional, national, and international statistics of new enterprises, 3. classify entrepreneurial traits and risk situations of start ups 4. self-assess entrepreneurial traits 5. managing finance tasks in entrepreneurial projects 6. assess different types of setting up a business according to specific advantages and disadvantages 7. design business models using different heuristics 8. understand and identify parameters of change projects within firms 9. analyze and change the culture of firms 10. understand the psychology of change, help people accept the change and support them during the change process | | |
| Prerequisites | None | | |
| Literature list | • Fritsch, Michael: Entrepreneurship. Theorie, Empirie, Politik, Springer, Springer Gabler 2016  • Fueglistaller, Urs/Müller, Christoph/Müller, Susan/Volery, Thierry: Entrepreneurship, 4. Auflage, Springer Gabler 2016  • Grichnik, Dietmar/Brettel, Malte/Koropp, Christian/Mauer, René: Entrepreneurship, 2. Auflage,Schäffer-Poeschel, 2017  • Herger, Mario: Das Silicon Valley Mindset, Plassen-Verlag: Kulmbach, 2016  • Osterwalder, A./Pigneur, Y.: Business Model Generation, Campus 2011  • Schnedler, J.: Startup Recht. Praktischer Leitfaden für Gründung, Unternehmensführung und –finanzierung, O`Reilly, Heidelberg, 2. Auflage 2020.  • Felden, B./ Pfannenschwarz, A.: Unternehmensnachfolge. Perspektiven und Instrumente für Lehre und Praxis, München 2008.  • Change Management: Kapitel 3 in: Gassmann, O./Frankenberger, K./Csik, M.: Geschäftsmodelle entwickeln, Hanser Verlag, München, 2017 | | |

### Project & Case-Studies

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Engineering Sciences |
| Academic year | 2 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Winter semester, summer semester |
|  |  |  |  |
| Course content | Individual coaching based on area of interest.  Different professors can offer different topics.  Can be offered on Bachelor and on Master level.  If interested, please get in touch with the corresponding professor or with the dean of the faculty Engineering, Mrs. Anke Müller. | | |
| Learning objectives |  | | |
| Prerequisites | None | | |
| Literature list | will be announced individually. | | |

### Project Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Engineering Sciences |
| Academic year |  | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Project work together with regular Master students | | |
| Learning objectives |  | | |
| Prerequisites | None | | |
| Literature list | will be announced during the lecture. | | |

### Commercial Project Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Engineering Sciences |
| Academic year |  | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Project work together with regular Bachelor students | | |
| Learning objectives |  | | |
| Prerequisites | None | | |
| Literature list | will be announced during the lecture. | | |

### Hardware-Oriented Robotics

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Industrial Engineering |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | • Structure and application fields of industrial robots • Mathematical pose description of robot links • Kinematic transformations of serial robots • Motion generation • Modelling of robot dynamics • Control of industrial robots • Robot programming | | |
| Learning objectives | The students have obtained an overview of common method for control and programming of industrial robots. They are able to implement these algorithmically in a digital computer system for solving and analyzing application-related problems using simulation. | | |
| Prerequisites | Engineering mathematics | | |
| Literature list | • Weber, W.: Industrieroboter. Methoden der Steuerung und Regelung. Hanser Verlag • Siciliano, B. et al.: Robotics. Modelling, Planning and Control. Springer Verlag • Craig, J.: Introduction to Robotics. Mechanics and Control, Pearson • Siciliano, B.; Khatib, O.: Handbook of Robotics, Springer Verlag | | |

### Fundamentals of technology in civil engineering

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Engineering Sciences |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 315 |
| ECTS | 12 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | This module will develop students understanding of technology in civil engineering in line with relevant regulations and reveals the importance of the construction industry. It covers the stages of construction, from site investigation through substructure & superstructure works to internal works & finishes as well as the integration of services. The course include topics such as Structural analysis, surveying, building construction, steel and concrete design, soils and foundations, Eurocodes and Basis of structural design, Construction Project Management, etc. The module uses case studies of building projects to ensure students gain a firm grasp of the construction technology. The course covers the analysis of non domestic construction, high-rise buildings, modern methods of construction, building maintenance, refurbishment and adaptation procedures. Relevant case studies are used to bring together the principles of design for buildablity, maintenance and sustainability alongside relevant environmental and building regulations. The course covers both traditional classical technologies and modern Trends in Civil Engineering, such as Building information modeling (BIM), the inspection of buildings, using laser scanning, 3D-Printing of building structures, etc. In addition to the basic technical skills in technology, structures, materials, etc., students will take information about the life cycle and investment process in construction, project management, performing analysis of various design decisions, sustainable building design, and other topics that enable projects to be completed on the basis of a variant approach and make the best decision in each individual situation. This module will help learners to understand construction management and productivity as an integral aspect of the industry. They will investigate industry job requirements, project complexities and interrelationships. The module also appraises current construction industry activities undertaken by stakeholders and the influence of technology and legislation. Students will also be able to examine the social and economic importance of the construction industry. | | |
| Learning objectives | The goals of the program are for students to achieve the following: • Have an understanding of various technologies and building materials in civil engineering. • Successfully planned and effectively managed any construction project, making effective decisions based on an alternative approach and understanding the feasibility, advantages and disadvantages of a particular material, type of construction, construction technology, etc. • Knew the various basic structural elements and layouts of a building, and understood the interaction of its components to form the overall structure. • Understood the selection criteria and proper use of building materials and the use of various technologies. • Distinguish between the types of load-bearing structures of buildings and the features of their materials and systems. • Knew technologies for heat, sound, moisture and fire protection of building structures. • Have an understanding of the life cycle and investment process in construction. • Compare and analyze the pros and cons of different design solutions and construction technologies. • Apply in practice knowledge about standardization in construction. • Became successful engineering specialists in the field of civil engineering. • Identified and solved complex technical problems arising from constantly evolving technologies in construction. • Have an understanding of various technologies and building materials in civil engineering. • Technical English Vocabulary in Civil Engineering | | |
| Prerequisites | - | | |
| Literature list | 1. Chudley, R. and Greeno, R. (2011) Construction Technology. 5th Edition. | | |

### Research Project Industry 4.0

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Industrial Engineering (B.Eng.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester, winter semester |
|  |  |  |  |
| Course content  Learning objectives  Pre-Requisites  Literature list | The temporal stages and phases of the activities of innovative product development are taught based on the usual industrial processes. For each phase, the necessary input, the methods and tools to be applied as well as the presentation and documentation of the respective interim result (= output) are taught. Individual work steps and methods are deepened by means of exercises and the student research project. With regard to the overall design, case studies and functional representations are considered and practiced. For the design of individual components, design rules are taught and an introduction to the use of CAE is given. In the student research project, individual methods are practiced in an international development team on the basis of a concrete development task. The application of methods and the ability to work in a team are equally important as the technical work. In addition, basics and future scenarios are presented and discussed based on the platform 'Industry 4.0'. These are to be taken into account in the preparation of the student research projects.  The students understand how product development is done in industry and are able to use approbriate tools and methods. They know the documents, which are used during the stages of development. They are able to do their job using or creating such documents. As an effect of the seminar paper/seminar project they are trained on some methods of development work. Because they did their seminar paper/project as a group, they have recognized the value of team work, they are able to share their results with others and are able to contribute their part to the whole job.They do this by using the applicable methods and tools and can evalute an adopt other methods, e.g. which are mentioned in literature. When designing the items of a technical system, the studends obey the rules of good design practise, in order that the items will fulfill the needs of manufactoring and function. The student have also an overview of the safety requirements, which technical products must meet.  None  d\* Pahl, G.; Beitz, W.: Konstruktionslehre, 8. Aufl.; Springer Verlag Berlin Heidelberg 2013; \*Lindemann, U.: Handbuch Produktentwicklung, Hanser Verlag, 2016; \*Naefe, P.: Konstruktionmethodik. Kurz und bündig. Springer Vieweg Verlag, 2019; \*Ehrlenspiel, L.; Meerkam, H.: Integrierte Produktentwicklung, 6. Auflage, Hanser Verlag, 2017 | | |

### Computer Science for Engineers

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Industrial Engineering (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Basic concepts of the database technology, * different data models, * Data base design by means of entity relationship model, * Using CASE-Tools for the generation of the database, * Normalizing of the data base design, * Become acquainted the database language Structure Query Language, * Interfaces to database systems and * Application development with different tools | | |
| Learning objectives | * Introduction of the basics of database theory, * drafting of relational database systems, * getting to know the database query language SQL, * overview of database software development | | |
| Prerequisites | None | | |
| Literature list | Will be announced during the first lesson. | | |

### Investment and Financing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Industrial Engineering (B.Eng.) |
| Academic year | 2 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | 1. Corporate Finance and the Financial Manager 2. Introduction to Financial Statement Analysis 3. Time Value of Money: Valuing Cash Flows 4. Interest Rates 5. Bonds 6. Stock Valuation 7. Investment Decision Rules 8. Risk and Return in Capital Markets 9. Systematic Risk and the Eqity Risk Premium 10. The Cost of Capital 11. Raising Equity Capital 12. Debt Financing 13. Capital Structure 14. Financial Modeling 15. Working Capital Management 16. Short Term Financial Planning | | |
| Learning objectives | Students are able to 1. identify the time value of money and the relationship between risk and Return 2. understand the structure of cash flows and evaluate them on the basis of those criterias 3. decide which alternative financial strategy should be preferred 4. identify the trade off between risk and return in different situations with different financial instruments | | |
| Prerequisites | None | | |
| Literature list | 1. Berk/DeMarzo/Harford: Fundamentals of Corporate Finance, 4th ed. 2019 – latest edition recommended.  Further literature will be announced during the first lesson. | | |

### Modern Methods of Digital Engineering

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Mechanical Engineering |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | • Data Science and Visualization • Machine Learning (ML) • Internet of Things (IoT) • Digital Process, -Material, -Prototyp, -Twin • Controlling, Regulation and Automatization | | |
| Learning objectives | The students are introduced to the trends of digital transformation in the industrial environment and their interfaces to engineering and especially to simulation. The fundamentals and opportunities of visualizing data using current software packages are presented on the basis of problem definitions. In the field of machine learning, students learn about some algorithms for performing regression analyses, classification and clustering of data. The deeper introduction to artificial neural networks is intended to teach possibilities and limitations. In the future, they should be able to choose their own methods and solve smaller problems. IoT shows some interactions to the field of engineering. These shall be shown. Trends and possibilities from the field of simulation are presented. The students should be able to recognize and classify a potential application of IoT technology in the field of process or product. The close connection to the fields of automation and robotics should be recognized. The students should be able to classify the concepts digital prototype, digital twin, digital material and digital process. By using practical examples the students should learn the interlinking strategies within the simulation. Some dependencies like type of analysis, data interfaces (formats) and software environment should be identified. | | |
| Prerequisites | None | | |
| Literature list | • Annalyn, Ng; Kenneth, Soo: Data Science – was ist das eigentlich?!. Springer: Berlin 2018 • Joshi, A.V.: Maschine Learning and Artificial Intelligence. Springer Nature Switzerland AG: Cham 2020 • Hritsev, R.M.: The ANN Book. 1st edition, Hritsev R.M: 1998 • Doebel, Inga; Leis, Miriam; Vogelsang, Manuel Molina: Maschinelles Lernen – Kompetenzen, Anwendungen und Forschungsbedarf. BMBF gefördertes Projekt, Fraunhofer Gesellschaft: 2018 • Hagan, Martin T.; Demuth, Howard B.; Beale, Mark H.: Neural Network Design. 2nd edition, Martin Hagan: 2014 • Serpanos, Dimitrios; Wolf, Marilyn: Internet-of-Things (IoT) Systems. 1st edition, Springer: New York 2018 | | |

## Sustainable Textiles (M.Eng.)

### Effect and Process Auxiliaries

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Münchberg | Study program | Sustainable Textiles (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Introduction into basic Eco toxicological principles, the hazard assessment and environmental fate of the mayor classes of effect and process chemicals. - Behavior of textile chemicals in waste water and sewage sludge treatment - Waste water relevant characteristics of textile chemicals (aquatic toxicity, persistence, - Biodegradability/ eliminability of chemicals and hazard testing of effect and process chemicals. - international standards for waste water, potable water and open water bodies | | |
| Learning objectives | Students will learn the basic steps on waste water treatment and environmental fate of textile chemicals. Students will learn to compare and assess effects of textile chemicals | | |
| Prerequisites | Standard conditions for master student, no additional requirements | | |
| Literature list | Textile Chemicals - Environmental Data and Facts/ Authors: Lacasse, K., Baumann, Werner OECD tools for chemical hazard and risk assessment OECD Guidelines for the Testing of Chemicals | | |

### *Project Simulation*

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Sustainable Textiles (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in |  |
|  |  |  |  |
| Course content | 1. Basics for "DoE - Design of Experiments" to develop new and for the assessment of existing sustainability processes/projects, based on meaningful data basis. 2. Basic of statistics and data analysis 3. Methods and concepts for setting up, performance and evaluating of experiments and investigations 4. Simulation of results based on examples of water handling in different applications (e.g. textile processing). 5. Communication of results | | |
| Learning objectives | 1. Students will learn the design and importance of experiments and investigations to develop sustainability processes/projects and evaluate their impact. 2. Students learn methods for the target-oriented selection of experimental criteria as well as essential statistical parameters and calculation methods for data analysis and result evaluation. 3. By using their own developed experimental designs, students learn to test and evaluate, classify their effects on the environment, and communicate the results effectively. | | |
| Prerequisites | Standard conditions for master student, no additional requirements | | |
| Literature list | Jiju Antony, "Design of Experiments for Engineers and Scientists", Butterworth-Heinemann, Oxford, 2003 \*William Navidi, "Statistics for Engineers and Scientists", McGraw-Hill, New York, 2011 \*"Design of Experiments" In: Analytic Methods for Design Practice. Springer, London, 2007 | | |

### Renewable Products for the Textile Industry

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Sustainable Textiles (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Introduction into the usage of renewable resources in textile industry. Usage and production of fibres made from renewable resources (such as man made cellullosic fibres, synthetic fibres made from vegetable oil/ starch or biopolymers). Production, modification and usage of textile chemicals made from renewable ressource. (biopolymers, biofuel based auxiliaries, natural dyestuffs). | | |
| Learning objectives | Students will learn about the application and advantage of renewable resources in textile industry. Environmental impact and challenges will be assessed, considering the reduction of green house gas emissions derived from petrochemical sources. The impact of biobased chemicals and fibres will be assessed as well as the limitations of their application.By preparing a project work they improve their skills in scientific writing. | | |
| Prerequisites | Standard conditions for master student, no additional requirements | | |
| Literature list | Reddy, Narendra, Yang, Yiqi : Innovative Biofibers from Renewable Resources \*Roland Ulber, Dieter Sell, Thomas Hirt Renewable Raw Materials: New Feedstocks for the Chemical Industry \* Russey, William E.: How to write a successful science thesis the concise guide for students \* Ebel, Hans F.: The art of scientific writing from student reports to professional publications in chemistry and related fields/ | | |

### Resource Efficient Application Technologies

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Sustainable Textiles (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 45 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Overview concerning conventional and advanced application methods for textile finishing, comparison of the application methods concerning sustainability | | |
| Learning objectives | Theoretical and practical knowledge concerning application methods for textile finishing processes | | |
| Prerequisites | - | | |
| Literature list | \*Rouette, H.K.: Handbuch der Textilveredlung Technologie, Verfahren und Maschinen. I. und II.Band. Frankfurt: Deutscher Fachverlag;  \*Schindler, W.D./Hauser, P.J.: Chemical finishing of textiles, Woodhead publishing; Subramanian Senthilkannan Muthu: Sustainable Innovations in Textile Chemistry and Dyes, Springer Verlag;  \*M.L. Gulrajani: Advances in the dyeing and finishing of technical textiles, Woodhead publishing;  \*T.Bechtold, T. Pham: Textile Chemistry, De Gruyter | | |

### Sustainable Functionalisation and Surface Modification of Textiles

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Sustainable Textiles (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Introduction to physical, chemical and biochemical techniques of surface modification and functionalization of textiles.  Current techniques such as e.g. modification through nanoparticles, enzymes, plasma treatment, microcapsules or  coatings, equipment and laminates will be discussed. Suitable testing methods to evaluate the properties of the functional  surfaces will be introduced. Introduction to the principles of green Chemistry and substitution, as well as hazard screening methods. | | |
| Learning objectives | The students acquire knowledge about surface modification techniques and can identify suitable test methods to characterize and  evaluate the properties of the surfaces. They will be enabled to make an informed choice about substitution of hazardous chemicals,  considering operational necessity and impact on production process as well as environmental impact of the textile chemicals. | | |
| Prerequisites | - | | |
| Literature list | \*Q. Wie: Surface modification of textiles, William C. Smith: Smart textile coatings and laminates  \*M. L. Gulrajani: Advances in  dyeing and finishing of technical textiles  \* Hu, Jinlian/ Fabric testing  \* Fan, Quinguo/ Chemical testing of textiles | | |

### Advanced Textile Chemistry

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Sustainable Textiles (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Overview concerning advanced pretreatment, dyeing, finishing and coating processes, waste water treatment | | |
| Learning objectives | Knowledge of advanced pretreatment, dyeing, printing, finishing and coating processes, waste water treatment | | |
| Prerequisites | - | | |
| Literature list | \*Aspland, J.R.; Textile Dyeing and Coloration, Durham; American Association of Textile Chemists and Colorists.1997  \*Broadbent, A.D.; Basic Principles of Textile Coloration, Bradfort; Society of Dyers and Colorists. 2001  \*Zollinger, H.; Color chemistry: syntheses, properties an application of organic dyes and pigments, Weinheim, VCH Verlagsgesellschaft, 1987  \*W.D.Schindler,P.L.Hauser: Chemical Finshing of Textiles, Woodhead Publishing  \*Leslie W.C. Miles: Textile Printing, SDC M.L. Gulrjain: Advances in the dyeing and finishing of technical textiles, Woodhead Publishing  \*A.Giessmann: Coating of Substrates and Textiles, Spinger | | |

### Advanced Textile Production

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Sustainable Textiles (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | All essential steps of textile production from fibre to textile surface and textile products are described in summary. Alternative methods of a process level are presented in a comparative manner. The aim is to provide all participants with an expanded knowledge of the complex relationships in the textile production chain. The various tasks are presented using the example of clothing textiles and technical textiles.Where possible, practical demonstrations complement what has been said | | |
| Learning objectives | The students have in-depth knowledge of machines and systems in the textile chain. In this regard, the students know the essential manufacturing processes. For a given target product, they can describe relationships across limits and possibilities of the textile chain and independently search for combinations of alternative procedures to solve the task. | | |
| Prerequisites | - | | |
| Literature list | Will be forwarded to you in the lecture | | |

### *Circular Economy / Certificates and Eco Labels*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Sustainable Textiles (M.Eng.)* |
| *Academic year* | *1* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *135* |
| *ECTS* | *6* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *1) Introduction into regulations considering waste as well as other non-product outputs like wastewater and air emissions. Introduction to the definition, concepts and implementation of a circular economy model. 2) Introduction to voluntary certification schemes for textile raw materials, textile chemicals and textile products (z.B. FSC, Bluesign, GOTS, GRS, Oekotex and others)* | | |
| *Learning objectives* | *1) The students will achieve knowledge about the history and development of the circular economy business model and learn to apply the concept on different actors/ processes in material supply chains.  2) The students will get a thorough knowledge on requirements set by voluntary Ecolabels/ certification schemes. They will learn to compare the key aspects of the certifications and Ecolabels and the applicability for different textile products. Integrity and compliance assurance is another aspect the students will learn.* | | |
| *Prerequisites* | *-* | | |
| *Literature list* | *Will be announced during lecture* | | |

### *Sustainable Project Management*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Sustainable Textiles (M.Eng.)* |
| *Academic year* | *1* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *135* |
| *ECTS* | *6* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *1. Global Concepts and Terms of Sustainability (social, environmental, economic and health)  2. Process mansagement and management systems 3. Setting, Measuring, Monitoring and reporting of environmental sustainability indicators 4. Implementation of sustainable innovations in the work flows of the different actors in the supply chain.  5. Communication, conflicts and decision making process* | | |
| *Learning objectives* | *1. The students get an insight of the existing concepts of sustainability and learn to understand the fields of application.  2. They will understand to use of standardized management tools. They get a detailed impression on planning and organization of sustainability in get a detailed insight into the organization and planning of sustainability in operational routine processes. 3. They will be enabled to estimate the impact of changing existent indicators or implementing new indicators. This is important especially in complex framework and decision making processes.* | | |
| *Prerequisites* | *-* | | |
| *Literature list* | *Introduction to UN Sustainability development Goals (UN Website) Introduction/ Basic literature for ISO 9001 and ISO 14001managment tools (Norms/ standard literature from library)  Introduction into Chemical management framework and training (ZDHC / GIZ Website)* | | |
|  |  | | |

### Simulation and Optimization

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Sustainable Textiles (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | • Application-oriented FEM • Linear and nonlinear static • Import of CAD models and meshing • element selection, boundary conditions, symmetry • Linear elasticity and plasticity of metal • Contact modeling • Evaluation of Finite Element Analysis • Natural frequency calculations • Model-optimisation | | |
| Learning objectives | Students can build a finite element model based on the required aims and understand the correct use of various types of items. They have the ability to assess the FEM results (error and convergence analysis). In this way they are able to discuss information, ideas, share problems and solutions on a scientific level | | |
| Prerequisites | - | | |
| Literature list | \* Bathe, Finite-Elemente-Methoden, Springer\\\* Schwarz, Methode der finiten Elemente\\\* TeubnerZienkiewicz, Methode der Finiten Elemente, Hanser\\\* http://www.simulia.com/support/documentation.html | | |

### *Legal Framework and Digitalization of the Textile Value Chain*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Sustainable Textiles (M.Eng.)* |
| *Academic year* | *1* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *135* |
| *ECTS* | *6* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *1) Introduction to global legal framework for textile production and products, such as GHS, POP, REACH, CLP, WFD, waste water and sludge regulation, product safety regulations as well as textile labelling regulation or safety regulation for children’s clothes 2) Introduction to classical data management tool, such as Enterprise-Resource-Planning (ERP) and the interfaces with new digital solutions, such as tools for - Assessment and substitution of hazardous substances - Monitoring of material flows and sustainable materials (E.g. RFID) - Material compliance, certification management and restricted substances  - Chemical management tools (EHS) - Automated production tools (dosing, energy, waste water) - Fashion/ garment design tools* | | |
| *Learning objectives* | *1) The students will achieve an overview of global regulations in textile industry and the impact on actors in the supply chain to comply with the regulatory requirements. They will learn about solutions and services to achieve compliance. The students get an insight in the variety of digital solutions used today in textile and textile chemicals supply chains 2) They will be trained in writing detailed technical specification for development of digital solutions to ensure legal compliance and sustainability* | | |
| *Prerequisites* | *-* | | |
| *Literature list* | *Several Guidance documents for REACH, CLP, BPR:* [*echa.europa.eu/guidance-documents/guidance-on-reach*](https://www.hof-university.com/external-link.html?no_cache=1&ref=https%3A%2F%2Fecha.europa.eu%2Fguidance-documents%2Fguidance-on-reach&target=_self) | | |

## Sustainable Water Management and Engineering (M.Eng.)

### Smart Water

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | SWM (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | 1. Technical basics of digitazation in water management (sensors, data transfer, automation/PLC, platform solutions, visualization,  etc.).  2. Methodological basics of digitization in water management (identification and evaluation of digitization potential, identification and  evaluation of digitization solutions, implementation obstacles, success factors).  3. Fields of application of digitalization in water management, limits and possibilities of application (Smart Water vs. Smart Cities).  4. The role of human being as an obstacle or success factor in digitization.  5. Examples and exercises on a real IoT test object | | |
| Learning objectives | 1. Students learn about the range of digital application possibilities for water management as well as their challenges and limitations.  2. Students learn methods to identify, to evaluate (e.g. so-called "anyway strategy" or the competence balance model) and to deal  with digital solutions at the water sector.  3. Students learn the interaction between sensors, data transmission, SCADA system and result analysis by working with an IoT test  object and the use of simulation tools. | | |
| Prerequisites | - | | |
| Literature list | \*Li, Jiada, Xiafei Yang, and Robert Sitzenfrei. "Rethinking the framework of smart water system: A review." Water 12.2 (2020): 412.  \*Antzoulatos, Gerasimos, et al. "Making urban water smart: the SMART-WATER solution." Water Science and Technology 82.12  (2020): 2691-2710.  \*Owen, David A. Lloyd. Smart water technologies and techniques: data capture and analysis for sustainable water management. John  Wiley & Sons, 2018. | | |

### Water and Society

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | SWM (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Anthropogenic influences on the water cycle, cultural differences in dealing with water and other environmental media, introduction to drinking water and wastewater treatment systems incl. dimensioning, impact of climate change / extreme weather events on society and infrastructure. Legislation in Germany, the EU and selected countries | | |
| Learning objectives | The students are able to evaluate the effects of usage behaviour with regard to water quality and quantity as well as the consequences of climate change / extreme weather events - also with regard to social challenges. They will also be able to derive appropriate measures. The students are also able to measure exemplary wastewater facilities. Legislation in Germany, the EU and selected countries | | |
| Prerequisites | - | | |
| Literature list | \*DWA Regelwerke A-210 (2016) /A-131 (2019) - wird zur Verfügung gestellt \*EU Water Framework Directive (WFD) ec.europa.eu/environment/water/water-framework/index\_en.html \* weitere Literatur wird während des Kurses mitgeteilt | | |

### New Technologies in the Water Sector

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | SWM (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Introduction to innovations, innovation management with methods for solution finding processes and innovation evaluation.  Getting to know new technologies in the field of drinking water and wastewater, rainwater and runoff management, water bodies and  groundwater, measurement and control technology, monitoring, also taking into account digital offerings.  Application of the acquired methods for the evaluation of technologies available on the market as well as for the development of new sustainable solutions. | | |
| Learning objectives | The students know the methods and processes of innovation management, can apply them to develop new solutions in the water  sector and to evaluate existing solutions. They are familiar with examples of new technologies offered on the market in the field of  drinking water and wastewater, rainwater and runoff management, water and groundwater, measurement and control technology,  monitoring. | | |
| Prerequisites | - | | |
| Literature list | \*Bukhman, I. (2021): Technology for Innovation, Springer  \*Prostean, G.I.; Lavios, J.J.; Brancu, L., Bakacsi G. (2020): Innovation in Sustainable Management and Enterpreneurship, Springer  weitere Literatur, präsentiert während der Vorlesung  \*Biswas, A.; Tortajada, C.; Rohner, P. (2018): Assessing Global Water Megatrends | | |

### *Project work simulation (Water systems)*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *SWM (M.Eng.)* |
| *Academic year* | *1* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *135* |
| *ECTS* | *6* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *The students start learning basics and more complex relations in the fields of biology of plants, fishes and microorganisms, technology of aquaculture, hydroculture and aquaponic, water chemistry and business administration. Based on that, the students work independently in groups a business canvas to optimise the existing aquaponic system from the point of view of consultants. The optimizations are carried out at the real aquaponic model and can be controlled among others via water measurements. The semi-virtual reality is created by the use of digital tools like moodle (virtual classroom, inluding communication platform), miro (group work space and presentation), E-Portofolio as well as a optical program (video, Draw.io).* | | |
| *Learning objectives* | *The students have gained knowledge about biological, technical and chemical principles and connections in an aquaponic system. Based on that they are able to evaluate a elementary, number-based planning of a aquaponic system, identify problems in the design respectively function, design optimization strategies and evaluate them. They are able to optimize a real system professionally in the role as a consulting instance. The students have independently acquired competences regarding use of digital tools and can present working results, discuss and assess them. They can use the gained knowledge of aquatic nutrient cycles and integrated water purification interdisciplinary.* | | |
| *Prerequisites* | *-* | | |
| *Literature list* | *FAO (2014): Small-sclae aquaponic food production. FAO Fisheries and Aquaculture technical Paper. | Goddek, Joyce, Kotzen, Burnell (2020): Aquaponics Food Production Systems. Springer Open. | Junge, Antenen, Villarroeal, Griessler Bulc, Ovca, Milliken (2020): Lehrbuch der Aquaponik für die Tertiärbildung. Zenodo. | Steinbach (2018): Die Fischproduktion in Kreislaufanlagen. AquaTech Publications. | Timmons & Vinci (2022): Recirculating Aquaculture. 5th Edition. Ithaca Publishing. |* | | |

### R&D or Industrial Project

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | SWM (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | 1. In small groups or individually, a limited question in the context of "sustainable water management and engineering" is worked on theoretically and practically together with a supervisor from the university. 2. The questions are from current research topics, e.g. of the iwe, or from an entrepreneurial context. 3. The student groups learn use methodological and, where appropriate, experimental approaches. 4. The projects are regularly presented and discussed in colloquia, and the work plan is adjusted as needed.For this purpose, appropriate project management is to be carried out. 5. The project result is summarized with a description of the procedure in a student research project in a format freely chosen and agreed upon with the supervisor. | | |
| Learning objectives | 1. Students get insight into project management and learn project design and processing of a completed research question in the context of an internal university research or industrial innovation project. 2. With the help of the so called Innovation Race, they learn in a structured form the essential principles of topic identification and evaluation, development implementation, aspects of innovation exploitation and consideration of external constraints. 3. The students will learn and apply methods to carry out the principles of the Innovation Race (project management, R&D canvas, SWOT, etc.). 4. The students learn to understand a research or innovation question in an independent manner, to identify the existing competencies of the group and to work on the project on this basis and finally to document it in a scientifically appropriate manner. | | |
| Prerequisites | - | | |
| Literature list | Peter Dortans (editor): "Innovation Race", Murmann-Verlag 2021 weitere Literaturhinweise in der Vorlesung | | |

### Advanced Water Treatment

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | SWM (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | winter semester |
|  |  |  |  |
| Course content | Basic concepts of process engineering and an introduction to general inorganic chemistry for water treatment processes. Mechanical processes of water treatment such as different filtration processes (microfiltration, nanofiltration , reverse osmosis, membrane processes). Chemical and physicochemical processes of water treatment. Drinking water treatment and special areas of industrial wastewater treatment. Case studies for different applications. AOP processes and photonic processes of water treatment. Dimensioning and design principles for all processes covered. | | |
| Learning objectives | Students will have a basic knowledge of process engineering, water chemistry and the various methods (chemical, mechanical, physical) of water treatment in the field of industry and drinking water treatment. The students are able to plan and dimension simple treatment plants according to the desired purification goal. They have knowledge of water treatment in specific industries and special requirements. | | |
| Prerequisites | - | | |
| Literature list | Umwelt, Weiterbildender Studiengang Wasser und ; e.V., DWA - Deutsche Vereinigung für Wasserwirtschaft Abwasser und Abfall ; Weimar, Bauhaus-Universität ; Hannover, Leibniz Universität: Basic Process Engineering in Industrial Wastewater Treatment : Legal Basis, Process Engineering, Production-integrated Environmental Protection. Regensburg: Univ.-Verlag, 2013. | | |

### *Wastewater Discharge and Sewer network with structures*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *SWM (M.Eng.)* |
| *Academic year* | *1* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *135* |
| *ECTS* | *6* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *1. Discussion of the importance of sustainable water protection and the technical protection possibilities, especially against the background of the problem of micropollutions and microplastics, which often enter the water bodies unpurified from sewers, as well as the influence on pluvial floods. 2. Basic systems and dimensioning of sewer systems, especially under the conditions of extreme weather events (dry periods and heavy rainfall). 3. Overview of technical equipment and IT systems in sewer systems and associated special structures (stormwater tanks, pumping stations, reservoir sewers, etc.) 4. Influence of sewer systems on the size and treatment outcome of wastewater treatment plants, its particular importance for the overall operation of an urban wastewater treatment system, and its role in the development of sponge cities. 5. Special role of digitalization for the interconnected control of sewers/sewage treatment plants in order to realize possible efficiency and effectiveness potentials for optimal protection of water bodies.* | | |
| *Learning objectives* | *Students will learn the basic systems of sewer networks and their associated special structures, how to size these systems in consideration of increasing extreme weather events, and the role they play for an effective protection of water bodies and sponge city development. Using practical examples and incorporating the research of the iwe Institute for Water and Energy Management, they learn about the modes of action and the importance of modern sewer network management and evaluating existing systems based on associated criteria. Students will work with examples to gain an understanding of the interaction between the structure, technical equipment and modern interconnected control systems.* | | |
| *Prerequisites* | *-* | | |
| *Literature list* | *Marsalek, Jiri, et al., eds. Hydroinformatics tools for planning, design, operation and rehabilitation of sewer systems. Vol. 44. Springer Science & Business Media, 2013. Larsen, Tove, Kai Udert, and Judit Lienert. Source separation and decentralization for wastewater management. Iwa Publishing, 2013. Brepols, Christoph, et al. "Model-Based Sewer Network Control-Practical Experiences." International Conference on Urban Drainage Modelling. Springer, Cham, 2018.* | | |

### International Water and Risk Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | SWM (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer Semester |
|  |  |  |  |
| Course content | Historical development of IWRM. Water cycle and basics of hydrology. Management of stormwater. European Water Framework Directive. Climate change in the context of IWRM. Example-based application of IWRM in different geographical areas and climatic zones. Emerging threats to water supplies - pollutants, microplastics and multi-drug resistant pathogens. Novel sanitation systems and material flow separation in water management. Knowledge transfer and capacity building in IWRM. Preparation for coursework and in-depth study of topics to be addressed. | | |
| Learning objectives | Students will have a basic knowledge of the historical development of IWRM. In addition to the objectives and methods, the application to different issues and geographical areas is taught. The students know the contents of the European Water Framework Directive and the implementation in Germany. An overview of future problems of water supply due to climate change and novel pollutants will be imparted. Students will further learn about the concept of material flow separation and novel sanitation systems in the context of sustainable water management and resource efficiency. In the context of urban rainwater management, students will gain insight into the concept of sponge cities. The knowledge will be deepened through complex assignments in the form of a student research project with presentation. insight into the concept of sponge cities. The knowledge will be deepened through complex assignments in the form of a student research project with presentation. | | |
| Literature list | Borchardt, Dietrich ; Bogardi, Janos J. ; Ibisch, Ralf B.: Integrated Water Resources Management: Concept, Research and Implementation. Berlin, Heidelberg: Springer, 2016. Grigg, Neil S.: Integrated Water Resource Management : An Interdisciplinary Approach. Berlin, Heidelberg: Springer, 2016. | | |

### *Sustainability Management*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *SWM (M.Eng.)* |
| *Academic year* | *1* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *135* |
| *ECTS* | *6* | *Course offered in* |  |
|  |  |  |  |
| *Course content* |  | | |
| *Learning objectives* | *Students know the current discussion around sustainability Students can apply sustainability in a structured way to companies as well as institutions, projects and products. They can create sustainability concepts and underpin them with key figures as well as create standardized reports. They are familiar with practical examples from the water industry and can independently transfer them to other applications.* | | |
| *Prerequisites* | *-* | | |
| *Literature list* | *"Brundtland-Commission (1987): Our Common Future. Franz, J. (2021): Nachhaltige Entwicklung technischer Produkte und Systme, Springer Vieweg Russ, M. Hrsg. (2017): Handbook of Knowledge Management for sustainable Water Systems. Wiley" further literature references in the lecture* | | |

### Water Quality and Water Cycle

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | SWM (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Natural and anthropogenic water cycle, chemical and biological characteristics of water, measurement methods, water balance,water in agriculture, aquaculture and food production in general, case studies with international and national topics, sanitation and water treatment systems, as well as water classification according to the characteristics (including gray, black water ) | | |
| Learning objectives | The students learn basic hydrological knowledge and can assign this to ecological processes. They will gain knowledge of national and international water issues. They are able to understand processes of using water as drinking water and / or for irrigation in anthropogenic application areas. | | |
| Prerequisites | - | | |
| Literature list | Lucas: Aquaculture: Farming Aquatic Animals and Plants, 3rd Edition, wiley 2019, 664 pages. Brutsaert: Hydrology - An Introduction, Cambridge 2005, 618 pages, Davie: Fundamentals of Hydrology, 3rd Edition, 2019, Routledge, CRC Press, 306 pages | | |

### Risk Management in the Water Sector

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | SWM (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Importance of water and climate change  Methods for risk assessment and mitigation in water management  Basics of the water cycle and international water policy  Water risk management in Germany and internationally  Case studies | | |
| Learning objectives | 1.1 Students learn to identify, classify and evaluate risks in international water management by applying the CRM (Climate Risk  Management) model, multi-level analysis and the Canvas method. The findings will be reflected in feedback sessions.  2.3 Students learn to apply and critically reflect on the CRM (Climate Risk Management) model, multi-level analysis and the Canvas  method.  2.5 Students gain a systemic understanding of risk using complexity analysis, which is part of multi-level analysis.  3.1 By using the CRM (Climate Risk Management) model, multi-level analysis and the Canvas method, students learn to view and  analyze risks in international water management holistically and from different perspectives.  4.1 In the module introduction, potential risks of international water management as critical infrastructure are also discussed, analyzed,  and assessed in light of the increasing impact of climate change on water quantity and quality, including as a societal issue.  4.3 See 4.1  5.1 Students are able to discuss and present complex issues within international teams in a foreign language. | | |
| Prerequisites |  | | |
| Literature list | Daniel P. LoucksEelco van Beek (2017) Water Resource Systems Planning and Management. Springer, Cham,  https://doi.org/10.1007/978-3-319-44234-1 Pollard, S. (2016). Risk management for water and wastewater utilities. Iwa  publishing. Grafton et al (2013) Understanding and Managing Urban Water in Transition. Springer. DOI 10.1007/978-94-017-9801- | | |

### Urban Waste Water Cycle

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | SWM (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Will be announced | | |
| Learning objectives |  | | |
| Prerequisites |  | | |
| Literature list |  | | |

## International Project Management

### Integrated Water Ressources Managemet

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | IPM (M.Eng./M.A.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Historical development of IWRM. Water cycle and basics of hydrology. Management of stormwater. European Water Framework Directive. Climate change in the context of IWRM. Example-based application of IWRM in different geographical areas and climatic zones. Emerging threats to water supplies - pollutants, microplastics and multi-drug resistant pathogens. Novel sanitation systems and material flow separation in water management. Knowledge transfer and capacity building in IWRM. Preparation for coursework and in-depth study of topics to be addressed. | | |
| Learning objectives | Students will have a basic knowledge of the historical development of IWRM. In addition to the objectives and methods, the application to different issues and geographical areas is taught. The students know the contents of the European Water Framework Directive and the implementation in Germany. An overview of future problems of water supply due to climate change and novel pollutants will be imparted. Students will further learn about the concept of material flow separation and novel sanitation systems in the context of sustainable water management and resource efficiency. In the context of urban rainwater management, students will gain insight into the concept of sponge cities. The knowledge will be deepened through complex assignments in the form of a student research project with presentation. insight into the concept of sponge cities. The knowledge will be deepened through complex assignments in the form of a student research project with presentation. | | |
| Prerequisites | - | | |
| Literature list | Borchardt, Dietrich ; Bogardi, Janos J. ; Ibisch, Ralf B.: Integrated Water Resources Management: Concept, Research and Implementation. Berlin, Heidelberg: Springer, 2016. Grigg, Neil S.: Integrated Water Resource Management : An Interdisciplinary Approach. Berlin, Heidelberg: Springer, 2016 | | |

# Department of Computer Science

|  |  |  |
| --- | --- | --- |
|  | Course offered in | |
|  | Winter semester | Summer semester | ECTS credits |
| **Study program** |  |  |  |
| **B.Sc. Business Information Systems** |  |  |  |
| Applied Artificial Intelligence | ☑ |  | 5 |
| Advanced Software Engineering | ☑ |  | 5 |
| Data Science |  | ☑ | 5 |
| Interdisciplinary practical course |  | ☑ | 5 |
| Practical Cloud Computing |  | ☑ | 5 |
| **B.Sc. Computer Science (=Informatics)** |  |  |  |
| CCNA Certification – Online courses (3 modules) | ☑ | ☑ | 2.5 each |
| CCNA CyberSecurity Operations | ☑ | ☑ | 5 |
| CCNA Network Security | ☑ | ☑ | 5 |
| Applied Machine Learning | ☑ |  | 5 |
| Applied Robotics | ☑ |  | 5 |
| *Artificial Intelligence in Robots* |  |  | 3 |
| *Internet of Things* |  |  | 5 |
| *Intercultural Competence* |  |  | 5 |
| *Formal Languages* |  |  | 5 |
| Cloud Computing |  | ☑ | 5 |
| Deep Learning for Natural Language Understanding |  | ☑ | 5 |
| Hypertext and Hypernarratives |  | ☑ | 5 |
| *Cooperative Autonomous Systems* |  |  | 5 |
| Project Work | ☑ | ☑ | 3 |
| **B.Sc. Computer Science** |  |  |  |
| Fundamentals of Programming | ☑ |  | 7 |
| Mathematics | ☑ |  | 5 |
| Success in Studies (Stuyding with Success) | ☑ |  | 3 |
| Fundamentals of Information Technology |  | ☑ | 5 |
| Operating Systems |  | ☑ | 5 |
| **M.Sc. Applied Research in Computer Science** |  |  |  |
| Data Mining and Machine Learning | ☑ |  | 6 |
| Behavioral Approaches in Computer Science | ☑ |  | 3 |
| Development and Design of Business Models | ☑ |  | 6 |
| HCI Perspectives in Hypertext and Related Topics | ☑ |  | 6 |
| Data Engineering and Analysis |  | ☑ | 6 |
| Information System Security |  | ☑ | 6 |
| New Technologies in Computer Science |  | ☑ | 3 |
| Design Science Approach in Computer Science |  | ☑ | 3 |
| **M.Eng. Software Engineering for Industrial Applications**  (max. 5 exchange students per course) |  |  |  |
| Non-Relational Databases | ☑ |  | 5 |
| Software Engineering | ☑ |  | 5 |
| Mobile Computing | ☑ |  | 5 |
| *Concepts and Tools of Application Development* |  |  | 5 |
| Component-Oriented Software Development |  | ☑ | 5 |
| Applied Cloud Computing |  | ☑ | 5 |
| Recent Trends in Software Engineering |  | ☑ | 5 |
| **M.Sc. Artificial Intelligence and Robotics**  (max. 5 exchange students per course) |  |  |  |
| Generative AI | ☑ |  | 6 |
| Advanced Architectures in AI | ☑ |  | 6 |
| AI Project | ☑ |  | 6 |
| Industry 4.0 and Data Management | ☑ |  | 6 |
| Applied Deep Learning |  | ☑ | 6 |
| Intelligent Robotics |  | ☑ | 6 |
| New Technologies in AI and Robotics |  | ☑ | 3 |
| Predictive Maintenance and Conditional Monitoring |  | ☑ | 6 |

## Business Information Systems (B.Sc.)

### Applied Artificial Intelligence

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Business Information Systems (B.Sc.) |
| Academic year | 2 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Basics of Classification and Regression  Support Vector Machines (SVM)  Decision Trees  Clustering (e.g.: K-NN and EM-Algorithm)  Neural Networks  Deep Learning  Network Architectures (e.g. CNN or R-NN)  Reinforcement Learning | | |
| Learning objectives | Students know the basic methods of supervised and unsupervised learning. They understand basic principles, issues and goals of machine learning.  They are able to solve practical problems independently using machine learning methods. For this purpose, they are able to handle the corresponding tools and frameworks.  In particular, students understand how neural networks work, know the most important architectures in the field of deep learning and can apply them to selected areas. | | |
| Prerequisites | Knowledge in mathematics, statistics and programming | | |
| Literature list | Frochte: MASCHINELLES LERNEN; Grundlagen und Algorithmen in Python, 2019  Bishop: Pattern Recognition and Machine Learning, 2013  Aurélien Géron: Hands-on Machine Learning with SciKit-Learn, Keras, and Tensorflow, OReilly 2019 | | |

### Advanced Software Engineering

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Business Information Systems (B.Sc.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Process models in software development Central UML diagrams (class diagrams, state diagrams, use case diagrams, sequence diagrams, activity diagrams) Basic SW architectures SW design (design principles and design patterns) Basics of SW testing | | |
| Learning objectives | Students have an overview of software engineering methods, techniques and procedures and are able to apply them in software projects. | | |
| Prerequisites | Good programming skills | | |
| Literature list | Balzert H., Lehrbuch der Objektmodellierung, Analyse und Entwurf, Spektrum Akademischer Verlag. Gomaa H., Software Modeling and Design, Cambridge University Press. Weitere Literatur wird vom Dozenten in der Vorlesung bekanntgegeben | | |

### Data Science

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Business Information Systems (B.Sc.) DA |
| Academic year | 1 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Processes for Data Science projects (e.g. CRISP-DM) * Tools and data ecosystems (e.g. Jupyter, Spark) * Methods and approaches for data preparation (e.g. dealing with missing values, dimensionality reduction, data balancing) * Methods and approaches for data analysis / modelling (e.g. classification, regression, clustering) | | |
| Learning objectives | Students know basis terms in context of data science.  Students understand selected approaches, which are used within the different phases of an data science project.  Students are able to solve selected (sub-)problems in the area of data science. | | |
| Prerequisites | Good programming skills, not for Bachelor beginners (as taught in the double degree program) | | |
| Literature list | Aggarwal, Charu C: Data mining: the textbook, ISBN 9783319141411, aktuelle Auflage;  Duda, Richard; Hart, Peter; Storck, David: Pattern Classification, ISBN 0471056693, Wiley Interscience, aktuelle Auflage;  Grues, J: Einführung in Data Science - Grundprinzipien der Datenanalyse mit Python, ISBN 3960091230, Oreilly, aktuelle Auflage | | |

### Interdisciplinary practical course

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Business Information Systems (B.Sc.) DA |
| Academic year | 2 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | \*Setting up and executing a software project according to a given process model.  \*Specification, construction, implementation and testing of the system  \*Agile software development  \*Refactoring  \*Version management  \*Working in heterogeneously composed teams | | |
| Learning objectives | Students are able to successfully apply the knowledge acquired from courses in the areas of programming and software engineering within the scope of a software project. They are able to construct, implement and test software systematically and in cross-curricular teams. | | |
| Prerequisites | good programming skills, knowledge of software engineering, not for Bachelor beginners | | |
| Literature list | Will be announced during lecture | | |

### Practical Cloud Computing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Business Information Systems (B.Sc.) DA |
| Academic year |  | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Will be announced during the faculty meeting by professor Heym | | |
| Learning objectives |
| Prerequisites |  | | |
| Literature list |  | | |

## Computer Science/Informatics (B.Sc.)

### CCNA Certification – Online course (3 modules in total)

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | online | Study program | Computer Science (B.Sc.) |
| Academic year | - | Attendance (in hours) |  |
| Semester hours per week | 3 x 2 | Self study (in hours) |  |
| ECTS | 3 x 2.5 (3 parts) | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Consists of three parts; each student can choose minimum one, maximum three parts (2.5 ECTS per part): * Part 1: Introduction to Networking (I2N) * Part 2: Routing, Switching and Wireless Essentials (RSWE) * Part 3: Enterprise Networking, Security and Automation (ENSA) * For each part a certificate can be acquired which add up to the Cisco Certified Network Associate (CCNA)   Please contact Prof. Dr. J. Heym for further information. | | |
| Learning objectives | Continuous learning objective controls on the computer. Practical final exam on the computer. After practical final exam there will be a Hands-on-Skills test in the laboratory and a final exam on the computer.  (Please note, that the dates of the final examination must be arranged with Prof. Dr. J. Heym, since the practical examination takes a lot of time.) | | |
| Prerequisites | Part 1 (I2N): none  Part 2 (RSE): I2N  Part 3 (ENSA): I2N+RSWE | | |
| Literature list | Prof. Dr. Heym will provide English course literature | | |

#### CCNA Certification – Module 1: Introduction to Networks

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | online | Study program | Computer Science (B.Sc.) |
| Academic year | - | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 52 |
| ECTS | 2.5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | CCNA R&S: Introduction to Networks (ITN) covers networking architecture, structure, and functions. The course introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations to provide a foundation for the curriculum.  The 70-hour, instructor-led course is the 1st of 4 courses in the Cisco CCNA Routing and Switching curriculum. The course includes activities using Packet Tracer, hands-on lab work, and a wide array of assessment types and tools. | | |
| Learning objectives | By the end of the course, students will be able to:   * Explain network technologies. * Explain how devices access local and remote network resources. * Describe router hardware. * Explain how switching operates in a small to medium-sized business network. * Design an IP addressing scheme to provide network connectivity for a small to medium-sized business network. * Configure initial settings on a network device. * Implement basic network connectivity between devices. * Configure monitoring tools available for small to medium-sized business networks. | | |
| Prerequisites | None | | |
| Literature list | Will be announced during the lecture | | |

#### CCNA Certification – Module 2: Routing, Switching and Wireless Essentials

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | online | Study program | Computer Science (B.Sc.) |
| Academic year | - | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 52 |
| ECTS | 2.5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | CCNA R&S: Routing and Switching Essentials (RSE) covers the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality.  The 70-hour, instructor-led course is the second of 4 courses in the Cisco CCNA Routing & Switching curriculum. The course includes activities using Packet Tracer, hands-on lab work, and a wide array of assessment types and tools. | | |
| Learning objectives | By the end of the course, students will be able to:   * Determine how a router will forward traffic based on the contents of a routing table. * Explain how switching operates in a small to medium-sized business network. * Use monitoring tools and network management protocols to troubleshoot data networks. * Configure monitoring tools available for small to medium-sized business networks. * Configure initial settings on a network device. * Configure Ethernet switch ports. * Implement VLANs. * Implement static routing. * Implement DHCP on a router. * Implement network address translation (NAT). * Implement access control lists (ACLs) to filter traffic. | | |
| Prerequisites | I2N | | |
| Literature list | Will be announced during the lecture | | |

#### CCNA Certification – Module 3: Enterprise Networking, Security and Automation

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | online | Study program | Computer Science (B.Sc.) |
| Academic year | - | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 52 |
| ECTS | 2.5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | CCNA R&S: Scaling Networks (ScaN) covers the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches for advanced functionality.  The 70-hour, instructor-led course is the 3rd of 4 courses in the Cisco CCNA Routing & Switching curriculum. The course includes activities using Packet Tracer, hands-on lab work, and a wide array of assessment types and tools. | | |
| Learning objectives | By the end of the course, students will be able to:   * Configure and troubleshoot routers and switches * Resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks * Implement a WLAN in a small-to-medium network | | |
| Prerequisites | I2N + RSE | | |
| Literature list | Will be announced during the lecture | | |

### CCNA CyberSecurity Operations

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof/online | Study program | Computer Science (B.Sc.) |
| Academic year | - | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
| Course content | Uncovering cybercrime, cyber espionage, and other networking threats are just some of the exciting cybersecurity jobs spanning across every industry. Learn the skills to join this fast-growing field and take advantage of the opportunities found in security operation centers. Feel confident that you are helping make the world a safer place by pursuing a role in this field.  In this course you will learn security concepts, security monitoring, host-based analysis, network intrusion analysis, and security policies procedures. This course also aligns with the National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework to support consistent communication language for cybersecurity education, training, and workforce development. | | |
| Learning objectives | You'll Learn These Core Skills: + Deepen knowledge in how best to detect and respond to security incidents. + Gain job-ready, practical skills in cybersecurity operations. + Develop critical thinking and problem-solving skills using real equipment and Cisco Packet Tracer. + Prepare for Cisco Certified CyberOps Associate Certification. | | |
| Prerequisites | CCNA modules 1+2 (Introduction to Networking & Switching, Routing, and Wireless Essentials) | | |
| Literature list | Santos, O: CCNA Cyber Ops SECOPS #210-255 Official Cert Guide | | |

### CCNA Network Security

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof/online | Study program | Computer Science (B.Sc.) |
| Academic year | - | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester, Summer semester |
| Course content | Picture yourself as a security professional with the mission to protect your company’s data from theft, damage, or disruption. Potential harm can come from a variety of sources. And the risk can quickly scale to a high-consequence event where you’ll have to react using the right knowledge. Network Security prepares you for tasks like these by developing the skills needed to design, implement and support security for network devices and ensure their integrity. Start building your expertise today and become an in-demand security professional tomorrow! | | |
| Learning objectives | You'll Learn These Core Skills: + Develop an in-depth understanding of network security. + Design, implement, and support security for networked devices and data. + Earn critical thinking and problem-solving skills using real equipment and Cisco Packet Tracer. + Gain industry recognized skills aligned with the National Institute for Standards and Technology (NIST) Cybersecurity Framework. | | |
| Prerequisites | CCNA modules 1+2 (Introduction to Networking & Switching, Routing, and Wireless Essentials) | | |
| Literature list | Santos, O.: CCNA Security 210-260 Official Cert Guide | | |

### Applied Machine Learning

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Computer Science (B.Sc.) |
| Academic year | 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Basic terms of machine learning Preparation of data Supervised learning Unsupervised learning Reinforcement learning | | |
| Learning objectives | Introduction to the field of machine learning. The basic principles are taught and selected techniques and approaches are theoretically explained and practically evaluated | | |
| Prerequisites | Good programming skills | | |
| Literature list | Frochte, J.: Maschinelles Lernen, 2018, Hanser Verlag Duda et al.: Pattern Classification, Wiley-Interscience, 2001 | | |

### Applied Robotics

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Computer Science (B.Sc.) |
| Academic year | 3 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content |  | | |
| Learning objectives |  | | |
| Prerequisites | Basic knowledge in programming | | |
| Literature list |  | | |

### *Artificial Intelligence in Robotics*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Computer Science (B.Sc.)* |
| *Academic year* | *3* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *2* | *Self study (in hours)* | *105* |
| *ECTS* | *3* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *This course teaches the basics of modern robotics and explains the various fields of application of robots. The focus lies on the conception, modeling and realization of stationary robot systems and their use in industry and research. The main following topics are covered:*   * *History and current fields of application* * *Designs and components* * *Sensors and actuators* * *Kinematics and dynamics* * *Control and kinematic path planning* * *Programming and learning systems* * *Frameworks: Orocos, Ros, OpenCV, PCL* | | |
| *Learning objectives* | *The aim of the lecture is to give students a profound overview of the basics of robotics. After attending the lecture, students will know and understand the basic methods for modeling, analysis and control of robots. They know and understand the components of a modern robot system. They are able to design and develop a robotic system and to plan the motion sequences. The students have an overview of the currently available sensor and actuator technology and are able to use it in a goal-oriented way. In addition, they are able to program and control a robot themselves with the available open-source frameworks.* | | |
| *Prerequisites* | *none* | | |
| *Literature list* | * *Helmut Maier (2019), Grundlagen der Robotik (Deutsch), VDE VERLAG GmbH, 2nd edition* * *B. Siciliano, O. Khatib (2017), Handbook of Robotics, Springer, 2nd edition* | | |

### *Internet of Things*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Computer Science (B.Sc.)* |
| *Academic year* | *3* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *105* |
| *ECTS* | *5* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | * *Use cases for IoT from Predictive Maintenance up to Wearables* * *Microcontroller and Single-Board Computer for IoT (Raspberry Pi, Arduino, Flora)* * *Radio protocols for the IoT (Z-Wave, IP6LoWPAN, EnOcean)* * *Data transmission in the smart factory (OPC-UA, CoAP, MQTT)* * *Microcontroller programming with Arduino* * *Basics about electrical engineering and circuits* * *Prototypical implementation of circuits with Arduino and Grove* * *Wireless control of IoT devices using Android Smartphones (Bluetooth Smart / LE)* * *Complex Event Processing and data analysis in IoT* * *Implementation of IoT scenarios like machine control, light control, autonomous vehicles and wearables* | | |
| *Learning objectives* | *The students are able to…*   * *develop solutions for the IoT on their own, which evaluate sensor data, recognize interesting events on this basis and switches actors situation dependent.* * *read sensor data with micro controllers, process them and send them using radio transceivers.* * *have awareness for saving energy while dealing with battery-powered sensors and* * *to optimize their micro controller program accordingly.* * *know relevant radio protocols for IoT applications with their respective (dis-)advantages* * *to choose an appropriate one for a given application scenario.* | | |
| *Prerequisites* | *None* | | |
| *Literature list* | * *Andelfinger: Internet der Dinge (Springer 2015);* * *Pinnow, Schäfer: Industrie 4.0 - Grundlagen und Anwendungen (Beuth 2015);* * *van Dam: Internet of Things (Elektor 2015);* * *Karvinen, Karvinen, Valtokari: Sensoren - messen und experimentieren mit Arduino und Raspberry Pi (dpunkt 2015)* | | |

### *Intercultural Competence*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Computer Science (B.Sc.)* |
| *Academic year* | *1* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *105* |
| *ECTS* | *5* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *1.1 Important migrations in history*  *1.2 Division of work*  *1.3 Globalization*  *1.4 Culture(s)*  *1.5 Prejudices and stereotypes*  *1.6 Cross-cultural competence(s)*  *2.1 Traditional and new working environment*  *2.2 Teamwork*  *2.3 Negotiation strategies*  *2.4 Organisational principles*  *3.1 History of Europe*  *3.2 History of Spanish America*  *3.3 History of India*  *4. Student's topics* | | |
| *Learning objectives* | *Students will know why specific problems occur when individuals leave their familiar culture.*  *They will be aware about different organisations of work.*  *They will learn some milestones of European, American and Indian history.*  *Finally, they will be able to reduce the time of adaptation to a new culture and new working circumstances.* | | |
| *Prerequisites* | *None* | | |
| *Literature list* | *None* | | |

### *Formal Languages*

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Computer Science (B.Sc.)* |
| *Academic year* | *2* | *Attendance (in hours)* | *45* |
| *Semester hours per week* | *4* | *Self study (in hours)* | *105* |
| *ECTS* | *5* | *Course offered in* |
|  |  |  |  |
| *Course content* | * *Formal description of structured data, parsing data:* * *Foundations of the theory on automata and complexity theory.* * *Formal Languages: grammers, Chomsky Hierarchy, Recursive Decendant Parser* * *XML: structure, Document Type Definition, XML Parser* | | |
| *Learning objectives* | *Understanding and applying methods for reading structured data into internal data structures.* | | |
| *Prerequisites* | *suitable for computer science students only* | | |
| *Literature list* | *Standard literature: Formal Languages and Automatentheorie*   * *J.E. Hopcroft u.a. (2011). Einführung in Automatentheorie, Formale Sprachen und Berechenbarkeit. 3. Aufl. Pearson Studium* * *T.A. Sudkamp (2005). An Introduction to the Theory of Computer Science. Languages and Machines. 3rd ed. Pearson/Addison Wesley* * *J.C. Martin (2003). Introduction to Languages and the Theory of Computation. 3rd ed. McGraw-Hill*   *Further literature will be announced in the lectures.* | | |

### Cloud Computing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Computer Science (B.Sc.) |
| Academic year | 2 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Unix / Linux operating system concepts * Unix shell programming (z. B. BASH, ZSH, CSH, etc.) * Basics, configuration and operation of operating system and network services (e.g. NTP, SSH, HTTP, DBMS, etc.) * Introduction to Server Virtualisation (z. B. VMware, Azure, VirtualBox, etc.) * Introduction to Cloud Computing * Scalable Container Infrastructures (z. B. Docker, Kubernetes, etc.) | | |
| Learning objectives | Concepts of the Unix / Linux operating system are introduced theoretically and practically. The students learn to use the Linux command line interface and are able to understand and to write shell scripts to solve system administration problems. Network and operating system services should be understood and put into operation.  The students are introduced into the field of server virtualisation with practical labs.  The students understand cloud computing concepts and are able to to apply the knowledge to different use cases (e.g. IaaS, PaaS, SaaS, etc.).  Problem specific planning, design, installation and operation of scalable container infrastructures build the challenge of this course. | | |
| Prerequisites  Literature list | Operating Systems Essentials (Linux)  Computer Networking Essentials (IPv4)   * Stender, D.: Cloud-Infrastrukturen, Rheinwerk Computing (2020) * Hiran, K. et al: Cloud Computing, bpb (2019) * Kofler,M.: Linux, Installation, Konfiguration, Anwendung, neueste Auflage, Addison-Wesley * Wendzel, S.: Einstieg in Linux, Rheinwerk Computing (2019) * Öggl, B. & Kofler M.: Docker: Das Praxisbuch für Entwickler, Rheinwerk Computing (2020) * Liebel, O.: Skalierbare Container-Infrastrukturen, Rheinwerk Computing (2020) * Burns, B.: Kubernetes (Eine kompakte Einführung), dpunkt.verlag, (2020) * Hightower, K: Kubernetes: Up and Running, O’Reilly (2019) * Wöhrmann, B. et al.: Vmware vSphere 6.7: Das umfassende Handbuch, Rheinwerk Computing (2018) | | |

da

### Deep Learning for Natural Language Understanding

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Computer Science (B.Sc.) |
| Academic year | 3 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Natural Language Processing and Natural Language Understanding (with examples) * Machine Learning and Deep Learning Basics (inkl. PyTorch und Tensorflow) * Data preparation: acquire text data, preprocessing, quality assurance * Word Embeddings: from one hot vector to Word2Vec, GloVe and ELMO * Basic NLP tasks: PoS tagging, syntactic parsing, NER, co-reference resolution * From NLP to NLU: semantic parsing, relation extraction, Semantic Web * Attention Mechanism and Transformers * Pre-training with unlabled data: different pre-training tasks * BERTology: BERT, RoBERTa, Electra, GPT * Finetuning for Question Answering: SQuaD and more * Transformers as Language Models for ASR * Resource-efficient language models | | |
| Learning objectives | Students understand the challenges of teaching machines to understand human language. They are able to choose and train good embedding models for a given use case and fine-tune pre-trained models for downstream tasks like question answering | | |
| Prerequisites | solid programming skills, not for Bachelor beginners | | |
| Literature list |
|  |

### Hypertext and Hypernarratives

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Computer Science (B.Sc.) |
| Academic year | 2 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Will be announced | | |
| Learning objectives |  | | |
| Prerequisites | Open to international cooperation and group work; open minded; interested in research; basic skills in scientific working | | |
| Literature list |

### Cooperative Autonomous Systems

|  |  |  |  |
| --- | --- | --- | --- |
| *Campus* | *Hof* | *Study program* | *Computer Science (B.Sc.)* |
| *Academic year* | *2* | *Attendance (in hours)* |  |
| *Semester hours per week* | *4* | *Self study (in hours)* |  |
| *ECTS* | *5* | *Course offered in* |  |
|  |  |  |  |
| *Course content* | *Will be announced* | | |
| *Learning objectives* |  | | |
| *Prerequisites* | *solid programming skills, not for Bachelor beginners* | | |
| *Literature list* |

## Computer Science (B.Sc.)

### Fundamentals of Programming

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Campus | Hof | Study program | | Computer Science (B.Sc.) |
| Academic year | 1 | Attendance (in hours) | | 67 |
| Semester hours per week | 6 | Self study (in hours) | | 142 |
| ECTS | 7 | Course offered in | | Winter semester |
|  |  |  | |  |
| Course content | * Datatypes and operators * Control Structures * References * Arrays * Classes and Objects * Inheritance * Polymorphism * Packages and Scoping rules * Exception handling * Class library * File and Console I/O –operations | | | |
|  | | |
| Prerequisites | none | | | |
| Literature list | Walter J. Savitch; Java: An Introduction to Problem Solving and Programming; Pearson Education;  Robert Sedgewick; Introduction to Programming in Java: An Interdisciplinary Approach; Sams Publishing  Allen Downey; Think Java: How to Think Like A Computer Scientist; O'Reilly UK Ltd.  Kathy Sierra; Head First Java; O'Reilly and Associates | | | |

### Mathematics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Campus | Hof | Study program | | Computer Science (B.Sc.) |
| Academic year | 1 | Attendance (in hours) | | 45 |
| Semester hours per week | 4 | Self study (in hours) | | 105 |
| ECTS | 5 | Course offered in | | Winter semester |
|  |  |  | |  |
| Course content | * Numbers and number theory * Sets, Relations and mappings * Sequences and Progressions * Logic and proofs * Groups and fields * Graph theory | | | |
|  | | |
| Prerequisites | none | | | |
| Literature list | Beutelspacher Albrecht, Zschiegner Marc-Alexander: „Diskrete Mathematik für Einsteiger“, Vieweg + Teubner Verlag  Brill Manfred: „Mathematik für Informatiker“ Hanser Verlag  Papula Lothar: „Mathematik für Ingenieure und Naturwissenschaftler“, Verlag Springer Vieweg  Teschl Gerald, Teschl Susanne: „Mathematik für Informatiker“ (Band 1), Springer-Verlag | | | |

### Success in Studies (Studying with Success)

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Computer Science (B.Sc.) |
| Academic year | 1 | Attendance (in hours) | 22,5 |
| Semester hours per week | 2 | Self study (in hours) | 65 |
| ECTS | 3 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Learning and learning theory * Creativity and motivation techniques * Writing and reading for studying * Finding information * Science and teaching * Helpful tools and procedures in studying | | |
| Learning objectives | Students are introduced to methods and tools that support successful studying. They can classify and apply these according to their personal preferences. | | |
| Prerequisites | none | | |
| Literature list | Will be announced during lecture | | |
|  |  | | |

### Fundamentals of Information Technology

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Computer Science (B.Sc.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Basic terms of information technology * Functioning of computers * Binary data, digital coding of integer and floating point numbers * Character encodings, e.g. ASCII, Unicode * Markup languages, e.g. XML * Digital encoding of multimedia content * Automatic theory, switching networks, KV diagrams * von-Neumann architecture, CPU structure * Machine instructions, assembler, registers, memory addressing * Functional units of computers: hardware components and peripherals * System software, e.g. BIOS/UEFI, basics of operating systems, drivers, processes | | |
| Learning objectives | Students know principles of digital information processing and understand how computers work. They know how numbers, texts and multimedia data are represented in computers and can explain basic processes for processing data. | | |
| Prerequisites | suitable for computer science students only | | |
| Literature list | Literature will be announced in the lectures. | | |

### Operating Systems

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Computer Science (B.Sc.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Classification of operating systems * Organisation and functionality of operating systems and kernels * Unix / Linux operating system concepts * Unix shell programming * Basics, configuration and operation of operating system and network services (e.g. NTP, DHCP, DNS, LDAP, SNMP, HTTP, SSH, CRON, DBMS, SYSLOG, etc.) | | |
| Learning objectives | * general functionalities and classification of operating systems. * Concepts of the Unix / Linux operating system are introduced theoretically and practically. * use of the Linux command line interface and understanding and writing shell scripts. * Basics, installation and operation of simple client-server environments are known. * The necessary network and operating system services should be understood and put into operation. | | |
| Prerequisites | suitable for computer science students only | | |
| Literature list | * Tanenbaum, Andrew. S.: Moderne Betriebssysteme, Pearson Studium, newest edition * Stallings, W.: Betriebssysteme, Prinzipien und Umsetzung, Pearson-Studium, newest edition * Kofler, M.: Linux, Installation, Konfiguration, Anwendung, newest edition, Addison-Wesley | | |

## Applied Research in Computer Science (M.Sc.)

### Data Mining and Machine Learning

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Applied Research in Computer Science (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Algorithms for data and text mining (clustering, classification, association analysis) * machine learning methods (e.g. Bayesian networks, support vector machines, artificial neural networks) * applications of modern analysis methods * planning and implementation of an analysis project * Exam: Study project (with presentation) | | |
| Learning objectives | The students are familiar with modern methods of data analysis. They can apply these in their own projects and are able to adapt the algorithms used to the special conditions of a concrete application case. They are able to evaluate the results achieved and to record them in the form of a written elaboration in the form of a scientific publication. | | |
| Prerequisites | Mathematical basic subjects (discrete mathematics, statistics), programming | | |
| Literature list | * Aggarwal: Data Mining (2015) * Aggarwal: Neural Networks and Deep Learning (2018) * Lantz: Machine Learning with R (2015) * Cichosz: Data Mining Algorithms (2015) * Feldman, Sanger: The Text Mining Handbook (2008) * Silge, Robinson: Text Mining with R (2017) * Current publications | | |

### Behavioral Approaches in Computer Science Research

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Applied Research in Computer Science (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 22,5 |
| Semester hours per week | 2 | Self study (in hours) | 67,5 |
| ECTS | 3 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | Two paradigms characterize research in computer science: behavioral science and design science. This module concentrates on behavioral science approaches that use empirical research to better understand human behavior and draw conclusions for designing information systems.   * Different forms of empirical research * Quantitative vs. qualitative research * Defining research questions and hypothesis * Systematic literature reviews * Case studies and meta studies * Surveys: scales, reusing of items, pretests * Qualitative interviews, transcription and categorization * Representative participant selection and sampling * Statistical considerations * Grounded theory approaches * Ethnographic studies in information systems research * Case studies | | |
| Learning objectives | Students know about the important aspects of behavioral science approaches and are able to appropriately apply those to given cases.  They are aware of common pitfalls in behavioral science approaches and are able to avoid them by reusing best practices from literature. They are able to systematically design qualitative and quantitative data collection measures, interpret the collected data in a consistent way and derive meaningful measures for information systems design. | | |
| Prerequisites | Basic statistical knowledge | | |
| Literature list | * Myers, M. D. (1997). Qualitative research in information systems. Management Information Systems Quarterly, 21(2), 241-242. * Myers, M. (1999). Investigating information systems with ethnographic research. Communications of the AIS, 2(4es), 1 * Myers, M. D., & Klein, H. K. (2011). A set of principles for conducting critical research in information systems. MIS quarterly, 17-36. * Urquhart, C., & Fernandez, W. (2016). Using grounded theory method in information systems: the researcher as blank slate and other myths. In Enacting Research Methods in Information Systems: Volume 1 (pp. 129-156). Palgrave Macmillan, Cham * Kaplan, B., & Maxwell, J. A. (2005). Qualitative research methods for evaluating computer information systems. In Evaluating the organizational impact of healthcare information systems (pp. 30-55). Springer, New York, NY. * Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research?: A review of qualitative interviews in IS research. Journal of Computer Information Systems, 54(1), 11-22. * Levy, Y., & Ellis, T. J. (2006). A systems approach to conduct an effective literature review in support of information systems research. Informing Science, 9. * Blumberg, B., Cooper, D. R., Schindler, P. S. (2008) Business research methods. McGraw-Hill Education, London et al. | | |

### Development and Design of Business Models

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Applied Research in Computer Science (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 22,5 |
| Semester hours per week | 2 | Self study (in hours) | 67,5 |
| ECTS | 3 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Design of business models * Value proposition design * Lean-startup-philosophy * Investor pitching | | |
| Learning objectives | Students are able to   * Identify business opportunities * Work these opportunities out in groups with interdisciplinary skills * Create a minimum-viable-product (MVP) according to the lean-startup-philosophy and optimize it using feed-back-loops * Design a professional pitchdeck * Present the pitchdeck to a group of experts and investors | | |
| Prerequisites | None | | |
| Literature list | * Grichnik, Dietmar/Heß, Manuel/Probst, Diego/Antretter, Torben/Pukall, Britta: Startup Navigator. Das Handbuch. Frankfurter Allgemeine Buch, Frankfurt a. Main, 2018 * Osterwalder, A./Pigneur, Y.: Business Model Generation, Campus 2011 * Osterwalder, A./Pigneur, Y./Bernarda, G./Smith, A.: Value Proposition Design, Campus 2014 * Faschingbauer, M.: Effectuation: Wie erfolgreiche Unternehmer denken, handeln und entscheiden, Schäffer-Poeschel, 2013 * Faltin, G.: Wir sind das Kapital, Murrmann 2015 * Hoffmeister, C.: Digital Business Modelling, Hanser 2015 * Ries E.: The Lean Startup, Penguin 2011 * Blank, S./Dorf, B.: The Startup Owner’s Manual, K&S Ranch, 2012 | | |

### HCI Perspectives in Hypertext and Related Topics

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Applied Research in Computer Science (M.Sc.) |
| Academic year | 1 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content |  | | |
| Learning objectives |  | | |
| Prerequisites |  | | |
|  |  | | |

### Data Engineering and Analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Applied Research in Computer Science (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * The Knowledge Discovery in Databases (KDD) Process, Data and Text Mining Basics, Basic Machine Learning, Data and Text Mining Algorithms * Data types (relational, vector data, texts, graphs) and their organization and storage, modern storage devices and access strategies * Modern frameworks for scalable and distributed programs. (Apache Spark, Apache Hadoop) | | |
| Learning objectives | The students know the basics of data analysis. They understand the (semi-automatic) KDD (Knowledge Discovery in Database) process. They have an overview of modern analysis methods and can assess their suitability for given tasks.  The students understand the problems of organizing data of different types and know the basics for the development of scalable and distributed working programs based on modern frameworks. They can assess the suitability of various storage devices and access strategies for given tasks. | | |
| Prerequisites | good programming skills, knowledge of fundamental algorithms and data structures, experience with relational databases (normalization, SQL, index structures) | | |
| Literature list | * Aggarwal: Data Mining (2015), Aggarwal: Neural Networks and Deep Learning (2018), Feldman, Sanger: The Text Mining Handbook (2008), * Freiknecht, Papp: Big Data in der Praxis: Lösungen mit Hadoop, Spark, HBase und Hive. (2018) * Chambers, Zaharu: Spark: The Definitive Guide: Big data processing made simple (2018) * Recent Publications | | |

### Information System Security

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Applied Research in Computer Science (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Basics of IT security (security mindset, Kerckhoffs's principle) * Basics of cryptography * Understanding of common vulnerabilities in system software (stack- and heap-based buffer overflows, format string, …) and appropriate countermeasures * Understanding of common vulnerabilities in web applications (XSS, SQL injection, …) and appropriate countermeasures * Understanding of attacks against network protocols (TCP/IP, routing attacks, spoofing, person-in-the-middle, DoS/DDoS, …) and appropriate countermeasures * Side-channel attacks | | |
| Learning objectives | Students know how attacks against system software, web applications, and network protocols work and can analyze, evaluate, and defend these attacks. Students can develop secure information systems and are aware of security issues. | | |
| Prerequisites | Linux shell experience, solid programming skills, operating system principles,  computer system architectures and basic knowledge in computer networks | | |
| Literature list | * James C. Foster, Vitaly Osipov, Nish Bhalla, Niels Heinen: Buffer Overflow Attacks – Detect, Exploit, Prevent (ISBN: 1-932266-67-4); * James Forshaw: Attacking Network Protocols – A hacker‘s guide to capture, analysis, and exploitation (ISBN: 1-59327-750-4); * Dafydd Stuttard, Marcus Pinto: The Web Application Hacker‘s Handbook – Finding and Exploiting Security Flaws (ISBN: 978-1-118-02647-2); * Ross Anderson: Security Engineering (ISBN: 978-0-470-06852-6); * Current scientific publications from IEEE S&P, ACM CCS, Usenix Security Symposium and NDSS. | | |

### New Technologies in Computer Science

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Applied Research in Computer Science (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | * Based on up-to-date publication this seminar introduces new trends and technologies in computer science. * Students are enabled to compare, rate and decide about the scope of application of new strategies in software development. * Beside techniques for software project management, new architectural concepts and programming methods as well as new technologies in computer science will be considered. * With this new insight, the students may improve the software development process or learn the use of new technologies in this domain. | | |
| Learning objectives | Students learn to use current research publications in the domains of practical and theoretical informatics. They are able to evaluate these papers, and to summarize, illustrate and present the results of research publications. Furthermore, the students are in a position to answer questions on the presentation topics. | | |
| Prerequisites | Skills in literature review techniques and independent topic preparation | | |
| Literature list | Will be announced in class. | | |

### Design Science Approach in Computer Science Research

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Applied Research in Computer Science (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Summer semester |
|  |  |  |  |
| Course content | Two paradigms characterize research in computer science: behavioral science and design science. This module concentrates on design science approaches that seeks to create and evaluate new and innovative artifacts.   * Design science – concepts and methodology * Requirements engineering and business - IT – alignment * Planning the evaluation before implementing the artifact * Using validated results: architectural choices and design patterns * Concentrating on own research goals by using libraries: criteria-based choices and their documentation * Rigor vs. relevance in information systems research * Software engineering vs. design science: Routine design vs. innovative solutions * Theories as guidelines: technology adoption and IS success * Repeatability of the evaluation: benchmarking the right thing * Case examples for applying the theory | | |
| Learning objectives | Students are able to   * know about the important aspects of design science approaches * appropriately apply them to given cases. * be are aware of common pitfalls in design science approaches * avoid them by reusing best practices from literature. * focus on the research question instead of focusing on implementing software. | | |
| Prerequisites | Requires at least 4 semester of Bachelor experience | | |
| Literature list | * Wieringa (2014) "Design science methodology for information systems and software engineering" * Dresch (2015) "Design science research : a method for science and technology advancement" * Meinel, Leifer (2019) "Design Thinking Research : Looking Further: Design Thinking Beyond Solution-Fixation" | | |

## Software Engineering for Industrial Applications (M.Eng.)

### Non-Relational Databases

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Software Engineering (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Max. 5 exchange students |
|  |  |  |  |
| Course content | * Application Development with Not-Only-SQL Database Management Systems and In-Memory-Grids * MongoDB * Redis * InfluxDB * data structure server with documents, key-value-pairs, strings, lists, sets, sorted-sets, and hashes store and pass data in your application * working with real code and examples introduction to data grids data * scaling with distributed setups | | |
| Learning objectives | * Choose the right data structure and noSQL-DBMS for your problem Solve, complex workflows and application demands * Configure your noSQL-DBMS-instances for optimal memory management Scale your data in a distributed setup Create mixed SQL database and NoSQL environments | | |
| Prerequisites | * SQL-DBMS * Java / OOP 1+2 * PHP / Web Development 1+2 | | |
| Literature list | * A. Ploetz, D. Kandhare, S. Kadambi and X. Wu: Seven NoSQL Databases in a Week | | |

### Software Engineering

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Software Engineering (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * phases of software engineering * techniques for medlling software * basics of UML * class diagramms * object diagramms * use case diagramms * sequenze diagramms * communications diagramms * basic of design pattern * module tests | | |
| Learning objectives | Students will learn basic goals, methods, techniques and procedures of software engineering. They will be able to apply autonomously these methods in order to develop clearly structured programs. | | |
| Prerequisites | Max. 5 exchange students | | |
| Literature list | * Ian Sommerville; Software Engineering * Robert Cecil Martin; Agile Software Development. Principles, Patterns, and Practices * Ronald J. Leach ;Introduction to Software Engineering | | |

### Mobile Computing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Software Engineering (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester |
|  |  |  |  |
| Course content | * Introduction to Kotlin programming language * Features relevant for programming smartphones * Overview of the Android operating system * Basic programming concepts (Activities, Intents, etc.) * Surface design (XML representation, etc.) * Resource usage incl. Internationalization * Context menus and navigation * Event handler and the Activity Lifecycle * Customization and adaptation of applications at different resolutions * Dealing with an integrated development environment and the emulator | | |
| Learning objectives | Students are able to   * develop simple mobile apps for a smartphone (e.g. Android). * With the help of development environments (IDE) they can design graphical user interfaces | | |
| Prerequisites | Java programming | | |
| Literature list | * Zigurd Mednieks, Laird Dornin, G. Blake Meike und Masumi Nakamura; Android Programmierung; 2013 * Thomas Künneth; Android 5: Apps entwickeln mit Android Studio; Rheinwerk Computing; 2015 * Bill Phillips und Brian Hardy; Android Programming: The Big Nerd Ranch Guide; Pearson Education; 2015 | | |

### *Concepts and Tools of Application Development*

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Software Engineering (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in |  |
|  |  |  |  |
| Course content | * Recent Trends in Application Development * Exam: study project and presentation | | |
| Learning objectives | The students are familiar with recent trends in Application Development. | | |
| Prerequisites | max. 5 exchange students after individual consultation | | |
| Literature list | Depends on recent trends in application development | | |
|  |  | | |

### Component-Oriented Software Development

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Software Engineering (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester |
|  |  |  | Max. 5 exchange students after individual consultation |
|  |  |  |  |
| Course content | The design of large and complex systems requires specific software engineering methods. To meet these challenges new methods and tools were developed over the last years, which base on the component oriented software development paradigm together with role based programming and design patterns.  To have a solid base from where to start, some of the more advanced features of modern object-oriented languages, such as reflection and automatic class loading will be treated.  In the labs, also the more advanced features of modern IDEs are demonstrated, especially in connection with re-factoring. On the other hand, the language and the tools of the architect must be learned and understood: it is shown, how UML and design patterns play a significant role in the software designing and engineering of any largescale project.  Soft-facts about the software engineering process are presented: how to estimate the size and cost of a project; factors influencing development speed and especially quality lead to agile development methods.  To get started with components, the client side will be considered first: Single-page client-side webpage development with AngularJS will be introduced. Finally, component concepts in the server world are presented. Here, in depth, the PHP Framework Yii2 is explored when planning and implementing the server side components using the PhpStorm IDE. REST services for back-end processes will be implemented. | | |
| Learning objectives | Students are able to understand the problems related to design and creation of large application. They should learn about advanced features of modern programming languages, deepen their understanding of design and test and be able to estimate the size and cost of complex software projects. After the examination, the students will have practical experience with the use of components in client software, as well as an enterprise setting. | | |
| Prerequisites | only senior students in Computer Science with knowledge in Web Development (HTML, CSS, JavaScript, PHP) | | |
| Literature list | * Web Application Development with Yii 2 and PHP, By Mark Safronov and Jeffrey Winesett * Yii2 Application Development Cookbook - Third Edition, By Andrew Bogdanov and Dmitry Eliseev * Yii2 By Example, By Fabrizio Caldarelli | | |

### Applied Cloud Computing

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Software Engineering (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester    Max. 5 exchange students after individual consultation |
|  |  |  |  |
| Course content | This course focuses on introducing the student to the role of information systems and technologies in achieving a variety of system goals. Emphasis will be placed on the theories and skills required for planning, developing, implementing, and managing the integration of information technology and different systems. This course focuses on emerging technologies related to what we call “the assembled web”. The assembled web is yet another level or stage of the web from the perspective of web development. We are talking here about existing technology clusters that can be assembled into customized solutions for any marketplace. Some of these technologies include: open source web stacks (like LAMP, for example), open source web content management systems (like Drupal or WordPress, for example), dependency management (like Drush, for example), libraries, frameworks, web services, SDKs, modules, themes, plug-ins, application programmer interfaces, content types, and data types within the context of creating useful, optimized, platform-agnostic user interfaces for data-driven applications.  This course will be most effective for students who can work independently in a productive manner with some online and face-to-face guidance. | | |
| Learning objectives | This course should prepare the students to take the CCNA Cloud certification. | | |
| Prerequisites | only senior students in Computer Science with knowledge in Computer Networking and Operating Systems | | |
| Literature list | CCNA Cloud CLDADM 210-455 Official Cert Guide, By Chris Jackson, Hank Preston and Steve Wasko | | |

### Recent Trends in Software Engineering

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Software Engineering (M.Eng.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Summer semester  Max. 5 exchange students after individual consultation |
|  |  |  |  |
|  |  |  |  |
| Course content | Based on current publications the seminar gives an idea of new developments in the field of software engineering to the students. The students will be empowered to compare different new approaches in the field Software Engineering, to evaluate them and to decide whether these approaches satisfy the requirements of a given problem in the field of software development or not. In addition to techniques for the execution of software projects, new architectural concepts and methodologies for programming may have to be taken into account during the evaluation process.  The students have to present their results. In presentations, they have to show their findings in different level of detail, for example to a chairman or to a computer scientist. With the acquired knowledge, they can derive improvements of the software development process or learn new techniques and technologies used in the field. | | |
| Learning objectives | Being able to gather information in the field of software engineering and to present it in different level of detail (for example to a chairman and to a computer scientist). In addition, the students should be able to answer questions to the topic during the presentation.  Reading and understanding recent research papers on software engineering;  Summarizing and presenting the results from these papers. | | |
| Prerequisites  Literature list | only senior students in Computer Science | | |

## Artificial Intelligence and Robotics (M.Sc.)

### Generative AI

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Artificial Intelligence and Robotics (M.Sc.) |
| Academic year | 1 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content |  | | |
| Learning objectives |  | | |
| Prerequisites |  | | |
| Literature list |  | | |

### Advanced Architectures in AI

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Artificial Intelligence and Robotics (M.Sc.) |
| Academic year | 1 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content |  | | |
| Learning objectives |  | | |
| Prerequisites |  | | |
| Literature list |  | | |
|  |  | | |

### AI Project

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Artificial Intelligence and Robotics (M.Sc.) |
| Academic year | 1 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content |  | | |
| Learning objectives |  | | |
| Prerequisites |  | | |
| Literature list |  | | |
|  |  | | |

### Industry 4.0 and Data Management

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Artificial Intelligence and Robotics (M.Sc.) |
| Academic year | 1 | Attendance (in hours) |  |
| Semester hours per week | 4 | Self study (in hours) |  |
| ECTS | 6 | Course offered in | Winter semester |
|  |  |  |  |
| Course content |  | | |
| Learning objectives |  | | |
| Prerequisites |  | | |
| Literature list |  | | |

### Applied Deep Learning

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Art. Intelligence and Robotics (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester    Max. 5 exchange students after individual consultation |
|  |  |  |  |
| Course content | \*Data Preparation (Splitting, Normalization, Standardization, Augmentation...) \*Introduction Neural Networks (Classification, Regression, Cost, Activation Functions) \*Deep Learning (Forward-, Backpropagation) \*Advanced Methods (Hyperparameter Tuning, Regularization, Learning Rate, Choice of Optimization Method) \*Convolutional Neural Networks (Convolution, Pooling Layer) \*Introduction to Deep Reinforcement Learning. | | |
| Learning objectives | Students know and understand the structure and mode of action of deep neural networks. They can prepare data, implement current methods using selected libraries and apply them to the data. They understand the effects of the individual parameters and can adjust them accordingly. | | |
| Prerequisites | Solid programming skills, knowledge of fundamental algorithms and data structures | | |
| Literature list | \* Ian Goodfellow, Yoshua Bengio, Aaron Courville: Deep Learning, 2017, online: [www.deeplearningbook.org](http://www.deeplearningbook.org/) \* Aurélien Géron: Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems \* Sudharsan Ravichandiran: Deep Reinforcement Learning with Python: Master classic RL, deep RL, distributional RL, inverse RL, and more with OpenAI Gym and TensorFlow, 2nd Edition | | |

### New Technologies in AI and Robotics

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Art. Intelligence and Robotics (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 3 | Course offered in | Summer semester    Max. 5 exchange students after individual consultation |
|  |  |  |  |
| Course content | \*Overview of recent publications in selected fields of AI and Robotics \*Compare and evaluate state-of-the-art approaches \*Overview of preparing scientific publications and presentations | | |
| Learning objectives | Students can use current research publications in the domains of ai and robotics. They are enabled to evaluate these papers, and to summarize, illustrate and present the results of research publications. Furthermore the students are brought into the position to answer questions on the presentation topics | | |
| Prerequisites | prior knowledge in the field of AI and robotics, skills in literature review techniques and independent topic preparation | | |
| Literature list | Dependent on selected topic | | |

### Predictive Maintenance and Conditional Monitoring

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | Art. Intelligence and Robotics (M.Sc.) |
| Academic year | 1 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 135 |
| ECTS | 6 | Course offered in | Summer semester    Max. 5 exchange students after individual consultation |
|  |  |  |  |
| Course content | \*Overview of application field and problems in the field of predictive maintenance and condition monitoring \*Overview of typical tools, algorithms, procedures and techniques in the relevant field \*Apply and evaluate known methods on selected data sets | | |
| Learning objectives | The students have an overview of typical application fields and problems in the field of predictive maintenance and condition monitoring. They are familiar with approaches to data preparation and data evaluation. They have an overview of typical processing, evaluation and machine learning methods in this field. They have mastered at least one typical interactive tool for prototyping applications in this field and can independently conduct their own investigations. They are able to estimate on the basis of these investigations which statements are possible for a given data set in an automated way. | | |
| Prerequisites | Programming skills; familiarity with basic statistical procedures; familiarity with basic machine learning concepts | | |
| Literature list | Will be announced during lecture | | |

# General Studies

|  |  |  |
| --- | --- | --- |
|  | Course offered in | |
|  | Winter semester | Summer semester | ECTS credits |
| **Study program** |  |  |  |
| German as a Foreign Language (A1-C1) | ☑ | ☑ | 5 |
| English for Technical Purposes (UNIcert II / III) | ☑ | ☑ | 5 |
| English for Business Purposes (UNIcert II / III) | ☑ | ☑ | 5 |
| French (UNIcert I / II / III) | ☑ | ☑ | 5 |
| Spanish (UNIcert I / II / III) | ☑ | ☑ | 5 |
| Chinese (UNIcert Basis) | ☑ | ☑ | 5 |
| Russian (UNIcert Basis) | ☑ | ☑ | 5 |
| Turkish for Business Purposes (B1 /B2 CEFR) | ☑ | ☑ | 5 |
| English Foundation Module 1 – Vocabulary and Grammar | ☑ | ☑ | 2,5 |
| English Foundation Module 2 – Discussions and Presentation Skills | ☑ | ☑ | 2,5 |
| Intercultural Training | ☑ | ☑ | 2-3 |
| Facts about Germany for international students | ☑ | ☑ | 3 |

## German as a Foreign Language A1 – C1

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 1-4 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Courses are offered on different levels corresponding to the Common European Framework of Reference for Languages (CEFR) during the regular lecture period: Basic, intermediate and Advanced Level * The courses consist of vocabulary, grammar, writing skills, Reading and Oral Interaction. | | |
| Learning objectives | Depending on the CEFR level of the course | | |
| Prerequisites | Entry Level Test at the beginning of the semester,  Online Registration via Hof University’s Language Center | | |
| Literature list | Depending on the CEFR level of the course , will be announced in class | | |

## English for Technical Purposes (UNIcert II / III)

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 1-4 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Courses are offered on different levels corresponding to the Common European Framework of Reference for Languages (CEFR) and UNIcert * The courses consist of vocabulary, grammar, writing skills, Reading and Oral Interaction. * A specialized vocabulary (engineering) of English will be developed | | |
| Learning objectives | Depending on the CEFR/UNIcert level of the course :  UNIcert II: ► Level B2 (Vantage) of the CEFR.  Language and intercultural competence that enables a study-related stay abroad (lowest level of mobility).  UNIcert III: ► Level C1 (Effective Operational Proficiency) of the CEFR.  Language and intercultural competence that completely satisfies the requirements of being able to study abroad (recommended level of mobility). Language for specific purposes orientation (e.g. business or technology) is also available. | | |
| Prerequisites | Levels B2 / C1; placement test required (see module description), Online Registration via Hof University´s Language Center | | |
| Literature list | Depending on the CEFR/ UNIcert level of the course , will be announced in class | | |

## English for Business Purposes (UNIcert II / III)

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 1-4 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Courses are offered on different levels corresponding to the Common European Framework of Reference for Languages (CEFR) and UNIcert * The courses consist of vocabulary, grammar, writing skills, Reading and Oral Interaction. * A specialized vocabulary (business) of English will be developed | | |
| Learning objectives | Depending on the CEFR/UNIcert level of the course  UNIcert II: ► Level B2 (Vantage) of the CEFR.  Language and intercultural competence that enables a study-related stay abroad (lowest level of mobility).  UNIcert III: ► Level C1 (Effective Operational Proficiency) of the CEFR.  Language and intercultural competence that completely satisfies the requirements of being able to study abroad (recommended level of mobility). Language for specific purposes orientation (e.g. business or technology) is also available. | | |
| Prerequisites | Levels B2 / C1; placement test required (see module description),  Online Registration via Hof University´s Language Center | | |
| Literature list | Depending on the CEFR/ UNIcert level of the course , will be announced in class | | |

## French (UNIcert I / II / III)

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 1-4 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Courses are offered on different levels corresponding to the Common European Framework of Reference for Languages (CEFR) and UNIcert * The courses consist of vocabulary, grammar, writing skills, Reading and Oral Interaction | | |
| Learning objectives | Depending on the CEFR/UNIcert level of the course:  UNIcert I: ► Level B1 (Threshold) of the CEFR.  Extension of the initial skills that enable communication in the language of everyday life.  UNIcert II: ► Level B2 (Vantage) of the CEFR.  Language and intercultural competence that enables a study-related stay abroad (lowest level of mobility).  UNIcert III: ► Level C1 (Effective Operational Proficiency) of the CEFR.  Language and intercultural competence that completely satisfies the requirements of being able to study abroad (recommended level of mobility). Language for specific purposes orientation (e.g. business or technology) is also available. | | |
| Prerequisites | Entry Level Test at the beginning of the semester  Online Registration via Hof University’s Language Center | | |
| Literature list | Depending on the CEFR/UNIcert level of the course , will be announced in class | | |

## Spanish (UNIcert I / II / III)

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 2, 3 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Courses are offered on different levels corresponding to the Common European Framework of Reference for Languages (CEFR) and UNIcert * The courses consist of vocabulary, grammar, writing skills, Reading and Oral Interaction | | |
| Learning objectives | Depending on the CEFR/UNIcert level of the course:  UNIcert I: ► Level B1 (Threshold) of the CEFR.  Extension of the initial skills which enable communication in the language of everyday life.  UNIcert II: ► Level B2 (Vantage) of the CEFR.  Language and intercultural competence that enables a study-related stay abroad (lowest level of mobility).  UNIcert III: ► Level C1 (Effective Operational Proficiency) of the CEFR.  Language and intercultural competence that completely satisfies the requirements of being able to study abroad (recommended level of mobility). Language for specific purposes orientation (e.g. business or technology) is also available. | | |
| Prerequisites | Entry Level Test at the beginning of the semester  Online Registration via Hof University’s Language Center | | |
| Literature list | Depending on the CEFR/UNIcert level of the course , will be announced in class | | |

## Chinese (UNIcert Basis)

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 1-4 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Course is offered on UNIcert-Basis level. * The course consist of vocabulary, grammar, writing skills, Reading and Oral Interaction. | | |
| Learning objectives | Depending on the UNIcert Basis level of the course:  UNIcert Basis: ► Level A2 (Waystage) of the CEFR.  The initial skills necessary for the basic and direct exchange of information. | | |
| Prerequisites | Entry Level Test required (online)  Attendance at least 80 % | | |
| Literature list | Depending on the CEFR/UNIcert level of the course , will be announced in class | | |

## Russian (UNIcert Basis)

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 1-4 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Course is offered on UNIcert-Basis level. * The course consist of vocabulary, grammar, writing skills, Reading and Oral Interaction. | | |
| Learning objectives | Depending on the UNIcert Basis level of the course:  UNIcert Basis: ► Level A2 (Waystage) of the CEFR.  The initial skills necessary for the basic and direct exchange of information. | | |
| Prerequisites | Entry Level Test required (online)  Attendance at least 80 % | | |
| Literature list | Depending on the CEFR/UNIcert level of the course , will be announced in class | | |

## Turkish for Business Purposes (UNIcert II; B1 / B2 CEFR)

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 1-4 | Attendance (in hours) | 45 |
| Semester hours per week | 4 | Self study (in hours) | 105 |
| ECTS | 5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Courses are offered on different levels corresponding to the Common European Framework of Reference for Languages (CEFR) and UNIcert * The courses consist of vocabulary, grammar, writing skills, Reading and Oral Interaction. * A specialized vocabulary (Business) of Turkish will be developed | | |
| Learning objectives | Depending on the UNIcert Basis level of the course: | | |
| Prerequisites | Entry Level Test at the beginning of the semester  Online registration via Hof University’s Language Center | | |
| Literature list | Depending on the CEFR/UNIcert level of the course , will be announced in class | | |

## English Foundation Module 1 - Vocabulary and Grammar

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 1 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 52 |
| ECTS | 2.5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | Introduction to grammatical structures, vocabulary and phrases useful for advanced learners of English. Specific attention will be given to common mistakes and transfer errors made by students at this level. | | |
| Learning objectives | The course is taught at the B1 level of the Common European Framework of Reference for Languages (CEF). By the end of the course you should be able to:  - better understand and apply a range of grammatical structures and to possess a wider vocabulary in order to more confidently express yourselves in various contexts. | | |
| Prerequisites | In order to enroll in the English Foundation 1 - Vocabulary and Grammar (B1) Course, students must complete a placement test, administered at Hof University, and achieve level A2/B1 or above.. | | |
| Literature list | Articles from newspapers and business magazines, PowerPoint slides, role plays, worksheets, web pages, blogs, videos, podcasts, and audio files. | | |

## English Foundation Module 2 - Discussions and Presentation Skills

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 1 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 52 |
| ECTS | 2.5 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | Discussing business/technology topics, case studies and articles  Learning about business culture & etiquette  Expressing opinions and discussing pros and cons  Building business/technology vocabulary (words, expressions and idioms)  Delivering presentations in English | | |
| Learning objectives | This course will allow you to improve your English communication skills and fluency through regular practice of speaking activities (group discussions, role plays, presentations, pair work, and group work). Likewise, you will increase your knowledge of vocabulary and idioms relevant to particular topics of discussion.  The course is taught at the B2 level of the Common European Framework of Reference for Languages (CEF).  By the end of the course you should be able to:  apply the content knowledge, phonetics, grammar, and vocabulary related to all the topics covered in this course with a degree of fluency and spontaneity that allows for regular interaction with native speakers without strain for either party.  explain a viewpoint on different topical issues  point out advantages and disadvantages of various options  deliver informative business/technical presentations on the topics discussed in class throughout the semester | | |
| Prerequisites | In order to enroll in the English Foundation 2 - Discussions and Presentation Skills Course, students must complete a placement test, administered at Hof University, and achieve level B1 or above.  The English Foundation 2 - Discussions and Presentation Skills Course can be counted as a UNIcert II module. In order to complete UNIcert II (business or technical English), you must have successfully completed four modules. Only then will you receive a UNIcert certificate.) | | |
| Literature list | Articles from newspapers and business magazines, PowerPoint slides, role plays, worksheets, web pages, blogs, videos, podcasts, and audio files. | | |

## Intercultural Training

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 2 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 67 |
| ECTS | 2-3 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Cultural awareness training * Group work, simulations, role plays and discussions * “Culture” and the impact of cultural imprint * Stereotypes and prejudices * Communication processes and different communication styles * Categories of cultural differences worldwide and in university context * Working in multicultural teams | | |
| Learning objectives | Students are able to develop effective coping strategies for dealing with intercultural situations and settings in university, professional and everyday life. | | |
| Prerequisites | Limited number of participants, registration required | | |
| Literature list | None | | |

## Facts about Germany for international Students

|  |  |  |  |
| --- | --- | --- | --- |
| Campus | Hof | Study program | General Studies |
| Academic year | 2,3 | Attendance (in hours) | 22 |
| Semester hours per week | 2 | Self study (in hours) | 55 |
| ECTS | 3 | Course offered in | Winter semester  Summer semester |
|  |  |  |  |
| Course content | * Facts about the Federal Republic of Germany (historical, political, cultural and regarding the economy) * Studying in Germany and role of the student in Germany * Applying for a job / internship in German / German job market and identification of potential and promising employers * European and German megatrends | | |
| Learning objectives | Students are able to   * get an overview about topics related to Germany and German economy. * join discussions regarding Germany in general and regarding the German economy in particular * obtain insights regarding study and work culture and regarding the expectations towards them. * identify and contact future employers | | |
| Prerequisites | None | | |
| Literature list | * Siebert, Horst (2005): The German Economy * Miles, Andrew (2005): Doing business and investing in Germany | | |

# Courses taught in German language

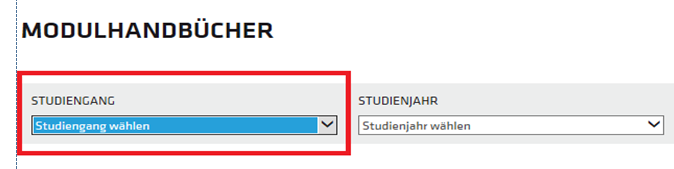
Most of our study programs are taught in German. Exchange students with sufficient knowledge in German (B2 according CEFR) are most welcome to choose courses taught in German.

You can find the descriptions for our courses taught in German on our German homepage:

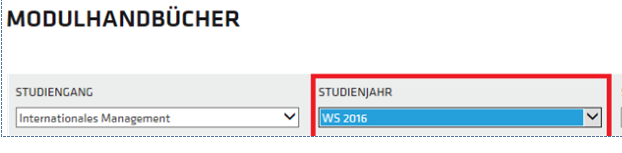
[**Modulhandbücher (Module descriptions in German)**](https://www.hof-university.de/studierende/info-service/modulhandbuecher.html)



Our module descriptions are sorted by study programs. Please select the relevant study program according your interest and major in order to find suitable courses



Please select the semester in which you are going to study at Hof University. Since the current course catalogue of the study programs will be published only at the beginning of the semester, please select the information of the previous academic year (WS = winter semester, SS = summer semester)



# University address and codes



Hochschule für Angewandte Wissenschaften Hof

Hof University of Applied Sciences

Alfons-Goppel-Platz 1

95028 Hof, Germany

[www.hof-university.de](http://www.hof-university.de)

[**international@hof-university.de**](mailto:international@hof-university.de)

ERASMUS code: D HOF01

EHCE: 28328-LA-1-2014-1-DE-E4AKA1-ECHE

PIC: 949478002

**Looking forward to welcoming you in Hof!**