UNIVERSITY OF APPLIED SCIENCES UPPER AUSTRIA

Course Offer

for Incoming Exchange Students

Summer Semester 2025

School of Engineering

fh-ooe.at/en/wels-campus

GENERAL INFORMATION

Choosing Courses

Exchange students may combine courses from different degree programmes (such as AT, BUT, IPM, etc.), different levels (Bachelor's/Master's) and different semesters, as long as they meet the prerequisites for each course. Please note that places in some courses may be limited.

*Please keep in mind that timetable overlaps may occur. A full workload for regular students is 30 ECTS per semester, due to timetable overlaps this is mostly not possible for exchange students. They are therefore expected to attend courses worth 25 ECTS.

Of course, exchange students who speak German fluently may also participate in courses taught in German at Wels Campus. For all others we offer German courses at various levels (free of charge).

NOTE: Students should read the course content carefully when making their course selection to see that the content matches to their study requirements.

Academic Calendar

Winter semester:	October 1st to mid- February (Semesters 1, 3, 5)
Summer semester:	March 1st to mid- July (Semesters 2, 4, 6)
Examination Period:	End of January to mid- February (winter semester) End of June to mid-July (summer semester)
Breaks:	Christmas (2 weeks), February (1 to 4 weeks), Easter (1 week), summer holidays in July/August/ September (12 weeks)

TYPES OF CLASSES

Lectures and Integrated Courses (VO, ILV, IC)

While some subjects are presented as "traditional" lectures, others are taught in the form of seminars, laboratory and practice-oriented sessions. In many cases, both lecture and practice-oriented sessions are combined in the same semester.

Seminars, Laboratory and Practice-oriented Sessions (SE, LA/LB, UE)

These are classes in which students work on special topics, then present and discuss them within a relatively small group. In laboratory and practice-oriented sessions students learn to apply their knowledge acquired in lectures and seminars.

Block Courses

In many cases – primarily in the case of seminars and laboratory classes – instruction does not take place weekly, but is instead delivered in blocks of more intensive instruction (e.g., one block every two weeks or even one block per term).

Excursions

Some courses occasionally include excursions, and attendance is generally obligatory. Any costs that arise for entrance fees, accommodation or other expenses are paid by the students.

Project

These are not theoretical projects but "real" work. Students work on problems relevant to the particular company. They work in teams of 4-10 students and are supervised and guided by a faculty member. Most of the time the teams work on their own and at the end of the semester they present their results to both their supervising faculty member and the company. The main aim of these projects is to train the students in teamwork. Teamwork and team spirit are key elements of Wels Campus philosophy – students learn to work together rather than competing with one another.

Course Packages

Automation/Electrical/Mechanical Engineering - BASIC

Programme	Code	Course Name	ECTS
EE.ba	EEN2LE	Electronic Circuit Design	3
EE.ba	EEN2PR	Electronic Circuit Design	2
EE.ba	SSK2SE	Presentation Techniques	1,5
EE.ba	PHY2LE	Physics for Engineering	4
EE.ba	PHY2PR	Physics for Engineering	4
EE.ba	MAT2LE	Mathematics II	5
EE.ba	MAT2PR	Mathematics II	2,5
		Total	22

Environmental & Chemical Engineering - BASIC

Programme	Code	Course Name	ECTS
LTE.ba	AYN2VO	Analytical Chemistry II	1
LTE.ba	MAT2IL	Mathematics II	3
LTE.ba	MIB1IL	Microbiology	2
LTE.ba	RSK2VO	Raw Material Sciences	2
LTE.ba	CHE2VO	Basics Chemistry	3
BI.ba	20_SKK2UE	Presentation & Scientific Work	2,5
VTP.ba	20_CHT6VO	Chemical Technology	2
		Total	15,5

Engineering Management / Product Development / Innovation - BASIC

Programme	Code	Course Name	ECTS
IPEM.ba	22_ENG4UE	English IV	2
IPEM.ba	22_PRM4IL	Project Management	1
IPEM.ba	22_PRO4IL	Programming	4
IPEM.ba	24_DMA2IL	Digital Marketing	1
IPEM.ba	24_ETE2IL	Electrical Engineering	2,5
IPEM.ba	22_INO2VO	Technology & Innovation Management 1	1
IPEM.ba	24_MAT2VO	Mathematics II	3
IPEM.ba	24_MEL2VO	Machine Elements	3
IPEM.ba	22_MFO2VO	Market Research I	1
		Total	18,5

Automation/Electrical/Mechanical Engineering - ADVANCED

Programme	Code	Course	ECTS
AT.ba	IBV6VO	Industrial Image Processing	2
AT.ba	IBV6LB	Industrial Image Processing	3
MB.ma	MOM2IL	Mechanics of Materials	6
MB.ma	DYN2IL	Dynamics	6
EE.ma	21_CEN2LE	Advanced Control Engineering	3
EE.ma	21_EFT2LE	Electromagnetic Field Theory in Multiphysics Systems	4
EE.ma	21_EFT2PR	Electromagnetic Field Theory in Multiphysics Systems	3
		Total	27

Environmental & Chemical Engineering - ADVANCED

Programme	Code	Course Name	ECTS
SES.ma	24_APS2IC	Applied Statistics	2,5
SES.ma	24_EMP2IC	Energy Markets and Policy	2,5
SES.ma	24_EPD2IC	Energy project Development	2,5
SES.ma	24_HYD2IC	Hydro Power	2,5
SES.ma	24_IPM2IC	International Project Management	2,5
SES.ma	24_SCP2IC	Scientifc Programming	2,5
VTP.ba	20_CHT6VO	Chemical Technology	2
BI.ma	KFK2UE	Negotiation & Moderation	2
		Total	19

Engineering Management / Product Development / Innovation - ADVANCED

Programme	Code	Course Name	ECTS
IPM.ma	20_CHM2SE	Change Management	1
IPM.ma	20_CTR2IL	Controlling	2
IPM.ma	20_DAA2IL	Data Analysis	3
IPM.ma	20_KAM2IL	International Key Account Management	2
IPM.ma	20_KFK2UE	Negotiation	2
IPM.ma	20_MPM2IL	Multi Project Management	2
IPM.ma	20_PEP2IL	New Product Development	3
IPM.ma	20_REE2IL	Requirements Engineering	2
IPM.ma	20_SUS2IL	Sustainability	1
AMM.ma	20_MOM2IL	Market Oriented Management	2
		Total	20

Course Packages

The above course packages are a new option that has been created for the relevant study fields starting from winter semester 2017. By selecting one of the above course packages (e.g., Environmental & Chemical Engineering Basic) it is highly unlikely that there will be any course overlaps. Should any additional courses be added there is no guarantee that overlaps will not occur, however students are most welcome to choose additional courses and check their timetables upon arrival.

Students may either select one of the above course packages or create their own individual course listing. By selecting individual courses, we cannot guarantee that overlaps will not occur, even though we will do our best to avoid those. Course changes upon arrival are possible if required but will most likely result in overlaps.

Bachelor's Degree Programme

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Automation Engineering (Bachelor, Wels Campus)							
AT.ba	22_BP6PT	Work Experience/Internship	Internship	6	Bachelor	8	7
AT.ba	22_IBV6LB	Industrial Image Processing	Laboratory session	6	Bachelor	3	8
AT.ba	22_IBV6VO	Industrial Image Processing	Lecture	6	Bachelor	2	9
Civil Engineering (Bachelor, Wels Campus)							
~~BI.ba~~	~~20_BFM4VO~~	~~Building & Facility Management~~	~~Lecture~~	~~4~~	~~Bachelor~~	~~1,5~~	~~10~~
BI.ba	20_FOL2UE	Foreign Language II	Practice-oriented session	2	Bachelor	1,5	11
BI.ba	20_PRO4PT	Project	Project	4	Bachelor	3	12
BI.ba	20_SES4IL	Sustainable Energy Supply	Integrated course	4	Bachelor	3	13
BI.ba	20_SKK2UE	Presentation & Scientific Work	Practice-oriented session	2	Bachelor	2,5	14
Electrical Engineering (Bachelor, Wels Campus)							
EE.ba	21_EEN2LE	Electronic Circuit Design	Lecture	2	Bachelor	3	15
EE.ba	21_EEN2PR	Electronic Circuit Design	Practice-oriented session	2	Bachelor	2	17
EE.ba	21_MAT2LE	Mathematics 2	Lecture	2	Bachelor	5	18
EE.ba	21_MAT2PR	Mathematics 2	Practice-oriented session	2	Bachelor	2,5	19
EE.ba	21_PHY2LE	Physics for Engineering	Lecture	2	Bachelor	4	20
EE.ba	21_PHY2PR	Physics for Engineering	Practice-oriented session	2	Bachelor	4	22
EE.ba	21_SDE6LE	Statutory Directives for Electrical Engineering	Lecture	6	Bachelor	3	23
EE.ba	21_SSK2SE	Presentation Techniques	Seminar	2	Bachelor	1,5	24
EE.ba	21_SSK4SE	Intercultural Competence for the Workplace	Seminar	4	Bachelor	1,5	25

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Electrical Engineering (Bachelor, Wels Campus)							
EE.ba	21_SSK6SE	Teamwork and Conflict Management	Seminar	6	Bachelor	2	26
School of Engineering (Bachelor, Wels Campus)							
FWE	DAF_A1.1_UE	German Language A 1.1	Practice-oriented session	2	Bachelor	3	28
FWE	DAF_A1.2_UE	German Language A 1.2	Practice-oriented session	2	Bachelor	3	29
FWE	DAF_A2.2_UE	German Language A 2.2	Practice-oriented session	2	Bachelor	3	31
FWE	DAF_B1.2_UE	German Language B 1.2	Practice-oriented session	2	Bachelor	3	33
FWE	DAF_B2.2_UE	German Language B 2.2	Practice-oriented session	2	Bachelor	3	35
FWE	DAF_C1.2_UE	German Language C 1.2	Practice-oriented session	2	Bachelor	3	36
Innovation, Product & Engineering Management (Bachelor, Wels Campus)							
IPEM.ba	22_ENG4UE	English IV	Practice-oriented session	4	Bachelor	2	37
IPEM.ba	22_PRM4IL	Project Management	Integrated course	4	Bachelor	1	38
IPEM.ba	22_PRO4IL	Programming	Integrated course	4	Bachelor	4	39
IPEM.ba	24_DMA2IL	Digital Marketing	Integrated course	2	Bachelor	1	40
IPEM.ba	24_ETE2IL	Electrical Engineering	Integrated course	2	Bachelor	2,5	41
IPEM.ba	24_INO2VO	Technology- & Innovationsmanagement I	Lecture	2	Bachelor	1	42
IPEM.ba	24_MAT2VO	Mathematics II	Lecture	2	Bachelor	3	43
IPEM.ba	24_MEL2VO	Machine Elements	Lecture	2	Bachelor	3	44
IPEM.ba	24_MFO2VO	Market Research I	Lecture	2	Bachelor	1	45
Lightweight Construction and Composite Materials (Bachelor, Wels Campus)							
LCW.ba	21_BIO4VO	Bionics and Examples of Lightweight Structures	Lecture	4	Bachelor	2	46

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Lightweight Construction and Composite Materials (Bachelor, Wels Campus)							
LCW.ba	21_BRP6PT	Internship	Project	6	Bachelor	18	48
LCW.ba	23_BIO4VO	Bionics	Lecture	4	Bachelor	2	49
LCW.ba	23_ENG2UE	English II	Practice-oriented session	2	Bachelor	1	51
LCW.ba	23_IPA4PT	Interdisciplinary Project 1	Project	4	Bachelor	4	52
Food Technology and Nutrition (Bachelor, Wels Campus)							
LTE.ba	23_AYC2VO_ENG	Analytical Chemistry II	Lecture	2	Bachelor	1	53
LTE.ba	23_BWL2IL_ENG	Business Administration	Integrated course	2	Bachelor	3	54
LTE.ba	23_MAT2IL_ENG	Mathematics II	Integrated course	2	Bachelor	3	55
LTE.ba	23_MIB1IL_ENG	Microbiology I	Integrated course	1	Bachelor	2	56
LTE.ba	23_RSK2VO_ENG	Raw Material Sciences	Lecture	2	Bachelor	2	57
LTE.ba	24_CHE2VO_ENG	Basics Chemistry	Lecture	2	Bachelor	3	58
Process Engineering and Production (Bachelor, Wels Campus)							
VTP.ba	20_CHT6VO_Gr.V	Chemical Technology	Lecture	6	Bachelor	2	59
VTP.ba	20_CHT6VO_Gr.V	Chemical Technology	Lecture	6	Bachelor	2	59
Materials and Process Engineering (Bachelor, Wels Campus)							
WFT.ba	23_PRO4PT	Project IV	Project	4	Bachelor	4	60

Master's Degree Programme

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Plant Construction (Master, Wels Campus)							
AB.ma	24_PCC2IL_Gr. V	Plant Construction Contracts	Integrated course	2	Master	4	61
Automotive Mechatronics and Management (Master, Wels Campus)							
AMM.ma	20_ACC2IL	Management Accounting	Integrated course	2	Master	2	62
AMM.ma	20_AIT2IL	Automotive IT Systems 2	Integrated course	2	Master	3	64
AMM.ma	20_DSE2IL	Drive Systems and E-Mobility I	Integrated course	2	Master	3	65
AMM.ma	20_DTC2IL	Drive Train Control Systems	Integrated course	2	Master	4	67
AMM.ma	20_FUS2IL	Functional Safety	Integrated course	2	Master	1	68
AMM.ma	20_MOM2IL	Market Oriented Management	Integrated course	2	Master	2	69
AMM.ma	20_QMA2IL	Automotive Quality Management 2	Integrated course	2	Master	2	71
Automation Engineering (Master, Wels Campus)							
AT.ma	MA4PT	Master Thesis	Master's thesis	4	Master	27	73
Civil Engineering (Master, Wels Campus)							
BI.ma	KFK2UE	Negotiation & moderation	Practice-oriented session	2	Master	2	74
BI.ma	KFK4UE	Leadership	Practice-oriented session	4	Master	1	75
Electrical Engineering (Master, Wels Campus)							
EE.ma	21_CEN2LE	Advanced Control Engineering	Lecture	2	Master	3	76
EE.ma	21_EFT2LE	Electromagnetic Field Theory in Multiphysics Systems	Lecture	2	Master	4	77
EE.ma	21_EFT2PR	Electromagnetic Field Theory in Multiphysics Systems	Practice-oriented session	2	Master	3	79
EE.ma	21_PET2LE	Advanced Power Electronics	Lecture	2	Master	3	80

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Innovation and Product Management (Master, Wels Campus)							
IPM.ma	20_CAID2UE	Computer Aided Industrial Design I	Practice-oriented session	2	Master	2	81
IPM.ma	20_CHM2SE	Change Management	Seminar	2	Master	1	82
IPM.ma	20_CTR2IL	Controlling	Integrated course	2	Master	2	83
IPM.ma	20_DAA2IL	Data Analysis	Integrated course	2	Master	3	84
IPM.ma	20_DET2IL	Design Theory	Integrated course	2	Master	1	85
IPM.ma	20_EHW2SE	Design & Prototyping	Seminar	2	Master	3	86
IPM.ma	20_IKM2SE	Intercultural Management	Seminar	2	Master	2	87
IPM.ma	20_KAM2IL	International Key Account Management	Integrated course	2	Master	2	88
IPM.ma	20_KFK2UE	Negotiation	Practice-oriented session	2	Master	2	90
IPM.ma	20_LCM2IL	Product Lifecycle Management	Integrated course	2	Master	2	91
IPM.ma	20_MBE2IL	Model Based Engineering - Introduction	Integrated course	2	Master	1	92
IPM.ma	20_MBE2LB	Model Based Engineering - Introduction	Laboratory session	2	Master	2	93
IPM.ma	20_MPM2IL	Multi Project Management	Integrated course	2	Master	2	94
IPM.ma	20_NBD2IL	Entrepreneurship & New Business Development	Integrated course	2	Master	1	95
IPM.ma	20_PEP2IL	New Product Development	Integrated course	2	Master	3	96
IPM.ma	20_REE2IL	Requirements Engineering	Integrated course	2	Master	2	97
IPM.ma	20_SUS2IL	Sustainability	Integrated course	2	Master	1	98
IPM.ma	20_VAR2IL	Virtual and Augmented Reality	Integrated course	2	Master	2	99
IPM.ma	20_ZET2SE	2D Presentation Techniques & Drawing	Seminar	2	Master	1	100

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Lightweight Construction and Composite Materials (Master, Wels Campus)							
LCW.ma	21_ADA4PT	Master Thesis	Project	4	Master	22	101
LCW.ma	21_APR2PT	Project Work II	Project	2	Master	12	102
LCW.ma	21_KOM2IL	Optimization Methods	Integrated course	2	Master	3,5	103
Mechanical Engineering (Master, Wels Campus)							
MB.ma	23_DYN2IL_Inc	Dynamics	Integrated course	2	Master	3	104
MB.ma	23_MOM3IL_Inc	Mechanics of Materials	Integrated course	2	Master	3	105
Sustainable Energy Systems (Master, Wels Campus)							
SES.ma	24_APS2IC	Applied Statistics	Integrated course	2	Master	2,5	106
SES.ma	24_EMP2IC	Energy Markets and Policy	Integrated course	2	Master	2,5	108
SES.ma	24_EPD2IC	Energy Project Development	Integrated course	2	Master	2,5	109
SES.ma	24_HYD2IC	Hydro Power	Integrated course	2	Master	2,5	110
SES.ma	24_IPM2IC	International Project Management	Integrated course	2	Master	2,5	112
SES.ma	24_SCP2IC	Scientific Programming	Integrated course	2	Master	2,5	113
Materials and Process Engineering (Master, Wels Campus)							
WFT.ma	AKW4SE	Selected Sections of Materials Engineering	Seminar	4	Master	1	114
WFT.ma	MAA4PT	Master Thesis	Project	4	Master	22	115
WFT.ma	PRJ2PT	Project Work 2	Project	2	Master	13	116
Plant Construction (Master - Part Time, Wels Campus)							
AB.ma	24_PCC2IL_Gr. B	Plant Construction Contracts	Integrated course	2	Master	4	117

Lecture/Seminar profile:

Work Experience/Internship (22_BP6PT)

Degree course	AT.ba
Course title	Work Experience/Internship
Course code	22_BP6PT
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	0,5
ECTS credits	8
Course type	Internship
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
The theme of the internship is based on concrete problems of industrial practice. It is a coherent task at the qualification level of the student, preferably in the context of a project. The work is done under the supervision of the degree programme and a supervisor in the company.

Prerequisites:
n.a.

Lecture/Seminar profile:

Industrial Image Processing (22_IBV6LB)

Degree course	AT.ba
Course title	Industrial Image Processing
Course code	22_IBV6LB
Level	Bachelor
Term	SS25
Lecturer	Kurt Niel
Contact hours per week	2
ECTS credits	3
Course type	Laboratory session
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
Laboratory:
- working with image processing software
- determination of geometric parameters
- filter methods
- size control
- presence control
- script recognition

Prerequisites:
n.a.

Lecture/Seminar profile:

Industrial Image Processing (22_IBV6VO)

Degree course	AT.ba
Course title	Industrial Image Processing
Course code	22_IBV6VO
Level	Bachelor
Term	SS25
Lecturer	Kurt Niel
Contact hours per week	2
ECTS credits	2
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Lecture:
- optics
- radiation
- components
- illumination
- camera
- transfer
- mathematics of image processing
- processes

Prerequisites:
n.a.

Lecture/Seminar profile:

~~Building & Facility Management (20_BFM4VO)~~ **CANCELLED COURSE**

Degree course	BI.ba
Course title	Building & Facility Management
Course code	20_BFM4VO
Level	Bachelor
Term	SS25
Lecturer	Albert Pilger
Contact hours per week	1
ECTS credits	1,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Basic knowledge of facility management, operation and maintenance of buildings, operational management, conversion and modernisation, information management (smart building), building automation (automatic monitoring, control, regulation and operational optimisation), energy management, warranty assurance.

Prerequisites:
n.a.

Lecture/Seminar profile:

Foreign Language II (20_FOL2UE)

Degree course	BI.ba
Course title	Foreign Language II
Course code	20_FOL2UE
Level	Bachelor
Term	SS25
Lecturer	Lehrpersonal Berlitz
Contact hours per week	1
ECTS credits	1,5
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Presentations (technical and business):
presenting Civil Engineering topics Presentation/explanation by students of topics from other subjects
Negotiations: Language/phrases/stages thereof + practice
Presentation/explanation by students of topics from the Semester 2 curriculum orally and/or in writing
Reading and discussion of articles on topics relevant/related to subjects of the curriculum/field of study
Audio-visual work (listening practice): watching relevant (=science/nature) documentary films + discussion thereof and vocabulary-building work
Reading and discussion of articles of general topical interest and/or theme-based: Politics/International Relations, Transport.
Presentation of project(s) ; holding of meetings for project(s)
Grammar revision as required e.g. conditionals, passive, relative pronouns
Technical terms and vocabulary

Prerequisites:
n.a.

Lecture/Seminar profile:

Project (20_PRO4PT)

Degree course	BI.ba
Course title	Project
Course code	20_PRO4PT
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Project
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
Solving of a challenging civil engineering project task, preferably within industrial practice, in a team. In this specific surrounding, the technical and social skills acquired in lectures and exercises are to be applied in the context of professional practice.

Prerequisites:
n.a.

Lecture/Seminar profile:

Sustainable Energy Supply (20_SES4IL)

Degree course	BI.ba
Course title	Sustainable Energy Supply
Course code	20_SES4IL
Level	Bachelor
Term	SS25
Lecturer	Sophie Messerklinger
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Overview of the possibilities and use of renewable energies to minimise the use of fossil energy sources and to reduce negative results of climate change on the basis of selected topics:
Solar energy use (PV, solar thermal), wind turbines, hydropower, biomass, geothermal energy, etc.

Prerequisites:
n.a.

Lecture/Seminar profile:

Presentation & Scientific Work (20_SKK2UE)

Degree course	BI.ba
Course title	Presentation & Scientific Work
Course code	20_SKK2UE
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
• Different types or objectives of presentations methods
• Advantages/disadvantages of different presentation media
• Principles of visualisation
• Peculiarities of human information processing
• Importance of eye contact, gestures/mimicry/habit linguistic and paralinguistic aspects for the success of presentations
• Positive handling of anxiety
• Influence of the environment on the success of presentations
• Video training
• Basics of scientific work including presentation methods

Prerequisites:
n.a.

Lecture/Seminar profile:

Electronic Circuit Design (21_EEN2LE)

Degree course	EE.ba
Course title	Electronic Circuit Design
Course code	21_EEN2LE
Level	Bachelor
Term	SS25
Lecturer	Mario Jungwirth, Harald Kirchsteiger
Contact hours per week	2
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
Understanding the fundamentals of semiconductors.
Principles and applications of essential semiconductors.
Knowing of fundamental discrete electronically circuits with focus on basic transistor circuits and op amp circuits. Knowing and applying the fundamental calculation methods for electronic circuits.
Principles to digital logic, Input-Output behavior, boolean math, and logic simplification. Basic understanding of transient circuit behavior, RC and LR circuits.

Content:
Semiconductor elements (Diode, Transistor, IGBT, Thyristor, Varistor,...)
• Physical principles
• Characteristics
• Operational behavior
• Elementary circuits
• Protective circuits
Basic optoelectronic elements and principles
• Photodiode and solar cell
Basics electronic circuits
• Electronically switches
  o Protection methods
    - Free wheel diode
• Analog amplifier
• Operational amplifier
• Constant current circuit
Digital circuits

Prerequisites:
EEN 1, MAT 1-2

Lecture/Seminar profile:

Electronic Circuit Design (21_EEN2PR)

Degree course	EE.ba
Course title	Electronic Circuit Design
Course code	21_EEN2PR
Level	Bachelor
Term	SS25
Lecturer	Sako Wanesian
Contact hours per week	1
ECTS credits	2
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
See EEN2LE Lecture

Content:
See EEN2LE Lecture

Prerequisites:
EEN 1, MAT 1-2

Lecture/Seminar profile:

Mathematics 2 (21_MAT2LE)

Degree course	EE.ba
Course title	Mathematics 2
Course code	21_MAT2LE
Level	Bachelor
Term	SS25
Lecturer	Harald Hinterleitner
Contact hours per week	4
ECTS credits	5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	4

Learning objectives:
Students will be able to understand the mathematical content below and apply it to practical problems, with particular emphasis on the use of a computer algebra system.

Content:
• Integral calculus: definite and indefinite integral, methods of integration (partial integration, substitution, partial fraction decomposition), improper integrals, applications of integral calculus (area, arc length, volume and surface area of a body of revolution, center of gravity, moment of inertia, work), derivation of formulas using the differential way of thinking.
• Ordinary differential equations: Conceptualization, separable differential equations, linear differential equations with constant coefficients, setting up differential equations, Laplace transform, applications in mechanics and electrical engineering.
• Fourier analysis: Fourier polynomials, applications in engineering, discrete Fourier transform.
• Multidimensional differential calculus: functions in several variables, partial derivatives, directional derivative, linear approximation, chain rule, minima and maxima, Newton's approximation method, Lagrange's multiplier method, interpolation, splines, linear and nonlinear regression.
• Eigenvalues and eigenvectors of matrices: basic notions, linear mappings, basic transformation, eigenvalues, eigenvectors and eigenspaces, diagonalizability of matrices, linear differential equation systems, applications in engineering, linear compensation problems, quaternions.
• Mathematics software: use of a computer algebra system in the above chapters.

Prerequisites:
Mathematics fundamentals at secondary school level

Lecture/Seminar profile:

Mathematics 2 (21_MAT2PR)

Degree course	EE.ba
Course title	Mathematics 2
Course code	21_MAT2PR
Level	Bachelor
Term	SS25
Lecturer	Harald Hinterleitner
Contact hours per week	2
ECTS credits	2,5
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	4

Learning objectives:
See MAT2LE Lecture

Content:
See MAT2LE Lecture

Prerequisites:
Mathematics fundamentals at secondary school level

Lecture/Seminar profile:

Physics for Engineering (21_PHY2LE)

Degree course	EE.ba
Course title	Physics for Engineering
Course code	21_PHY2LE
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
Understanding of basic physical relationships in technical systems, acquisition of the engineer's way of thinking (modeling of technical systems, focusing on the essentials), design and analysis of technical systems, knowledge of the functioning of elementary technical systems.
Knowledge of basic concepts and ways of thinking of engineering mechanics, ability to analyze forces and loads in static and dynamic systems. Basic strength calculations, analysis and design of simple kinematic mechanisms, analysis and design of dynamic behavior of components.
Furthermore, the basic equations of stationary and moving fluids, the law of conservation of energy and the law of momentum, frictional pressure loss of incompressible fluids in pipes, pressure loss in pipe elements, flow of compressible fluids, bodies flowing around. Exemplary analyses of selected components of fluid power systems (e.g., pumps, turbines, valves).
They will also learn to understand which of the thermodynamic laws represent axioms or empirical theorems and which can be derived from other physical laws and can thus be understood with a moderate mathematical effort. The students are enabled to apply thermodynamics in the professional field.

Content:
• Basics Statics
• Basics Dynamics
• Fundamentals of Fluid Dynamics.
• Physical relationships in flowing gases and fluids and their calculation methods.
• Knowledge and understanding of the fundamentals and concepts of technical thermodynamics and heat transfer
• solids, liquids gases, phase transitions
• Basic fluid mechanics and thermodynamics equations
• State variables

• Gas kinetic explanation of pressure
• Boltzmann statistics and temperature concept
• Ideal and real gases
• Specific heat
• Main laws of thermodynamics

Prerequisites:
No prerequisits required

Lecture/Seminar profile:

Physics for Engineering (21_PHY2PR)

Degree course	EE.ba
Course title	Physics for Engineering
Course code	21_PHY2PR
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	4
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
See PHY2LE Lecture

Content:
See PHY2LE Lecture

Prerequisites:
No prerequisits required

Lecture/Seminar profile:

Statutory Directives for Electrical Engineering (21_SDE6LE)

Degree course	EE.ba
Course title	Statutory Directives for Electrical Engineering
Course code	21_SDE6LE
Level	Bachelor
Term	SS25
Lecturer	Bernhard Spalt
Contact hours per week	1,5
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
The students have practice oriented basic knowledge of the fundamentals of business related legal aspects. They know about the principles of the Austrian „Elektrotechnikgesetz“ and its link to the ÖNORM EN 50110-1 „Operation of electrical installations“. They know about the duties of a qualified person as well the basic industrial safety principles.

Content:
Business and corporate law
Contract law
Trade law
Competition law
Labour law and social law
All topics above with special respect to electrical engineering

Prerequisites:
No prerequisits required

Lecture/Seminar profile:

Presentation Techniques (21_SSK2SE)

Degree course	EE.ba
Course title	Presentation Techniques
Course code	21_SSK2SE
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	1,5
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	4

Learning objectives:
The students are able to successfully plan, design, and carry out professional presentations.They are able to reflect and continuously improve their own presentation style.

Content:
Different types and objectives of presentations,
Advantages and disadvantages of different presentation media,
Rules of visualization,
Significance of eye contact, gesture/facial expression/habitus linguistic and paralinguistic aspects for the success of presentations;
Adapting to different presentation settings;
Constructive methods to deal with stress and nervousness
Video training

Prerequisites:
No prerequisites required

Lecture/Seminar profile:

Intercultural Competence for the Workplace (21_SSK4SE)

Degree course	EE.ba
Course title	Intercultural Competence for the Workplace
Course code	21_SSK4SE
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	1,5
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	4

Learning objectives:
The students understand cultural differences at the workplace in different countries and are able to analyse their own behavior for culturally “sensitive” areas. They can apply the knowledge about cultural differences to enhance successful communication in international teams.
The students knows how to write a professional CV and are prepared for job interviews in Austria and other countries.
The students have an overview over the legal situation for working in Austria and are capable to seek an internship or job and prepare the necessary steps for residence and work permits.

Content:
Writing a professional CV and application documents,
Job application process in Austria vs. other countries,
Training for job interviews,
Legal aspects of working in Austria: residence permits, work permits, basic labor law,
Cultural differences in the workplace; the implicit rules of how to be successful at work,
Collaboration in international teams,
Intercultural communication training: face-to-face, telephone and written correspondence

Prerequisites:
n.a.

Lecture/Seminar profile:

Teamwork and Conflict Management (21_SSK6SE)

Degree course	EE.ba
Course title	Teamwork and Conflict Management
Course code	21_SSK6SE
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
The students are able to identify the most important elements of a team developing process. They know how to direct the process according to the noticed needs and abilities of the other team members. They are qualified to analyse rising problems and find a suitable solution in order to achieve an effective result.
The students are able to notice, analyse and solve conflicts in reference to themselves and their (working-) context. Furthermore they have the ability to evaluate the level of conflicts and set appropriate measures. They are able to use the conflict methods to clarify the different points of views and find appropriate solutions.
They start to realise the range of possibilities and limits of their own behavior and actions.

Content:
Advantages and disadvantages of teamwork,
Conditions for effective teamwork,
Characteristics of a team (e.g. group cohesion, norms, psychological phe-nomenon, etc.),
Phases of team development (e.g. Blanchard, Tuckman, team clock from Francis/Young, etc.),
Roles within a team (e.g. Schindler, Belbin, etc.,)
Analysis of process within the teamwork and special aspects of intercultural teamwork,
Development of conflict management competence with intercultural as-pects,
Escalation levels of conflicts and intervention possibilities,
Analysis and reflection of precise conflict situations,
Who do I lead a constructive conflict conversation?
Measures and strategies in conflict prevention within the individual, team- and organization level,
Constructive thinking concerning personal offences,
“survival strategy” by non-solvable conflicts

Prerequisites:
No prerequisites required

Lecture/Seminar profile:

German Language A 1.1 (DAF_A1.1_UE)

Degree course	FWE
Course title	German Language A 1.1
Course code	DAF_A1.1_UE
Level	Bachelor
Term	SS25
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	3
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Topics / Grammar:
1. Introductions, greetings/verb conjugation (ich/du) and preposition aus
2. Family and Friends/personal pronouns, verb conjugation (leben, haben), preposition in, numbers 0-20
3. Eating and Drinking, food, shopping, prices, measurement units/indefinite article, negative article, plurals, verb: essen, numbers 21-100
4. My flat/apartment/domestic vocabulary, numbers 101-1,000,000, definite articles, personal pronouns, negation
5. Mein Tag/My Day: telling the time, daily activities, days of the week/separable verbs, verb position in sentence, prepositions: am, um, von…bis
6. Free time: the weather, seasons, in a restaurant, agreeing and disagreeing, hobbies/ accusative, verb conjugations: lesen, treffen, schlafen, fahren, nehmen, 'möchte'
7. Life-long Learning: expressing capabilities, intentions, describing past events and activities, learning skills/modal verbs, Perfect with to be, Perfect with to have…

Lehrbuch: Schritte International 1, Niebisch, Hueber Verlag

Prerequisites:
n.a.

Lecture/Seminar profile:

German Language A 1.2 (DAF_A1.2_UE)

Degree course	FWE
Course title	German Language A 1.2
Course code	DAF_A1.2_UE
Level	Bachelor
Term	SS25
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	3
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Topics/Grammar:

8. Jobs and Careers, Information, events, activities in the past, internship advertisements, unusual careers/word formation, simple past of sein and haben, modal preposition als, temporal prepositions: vor, seit, für
9. In an unfamiliar town: giving directions and advice, rules, understanding information brochures, in a hotel / modal verbs: müssen, dürfen, pronoun ‘man’, imperative
10. Health: parts of the body, describing others, talking about health, writing a letter, agreeing an appointment / possessive articles, modal verb sollen,
11. In town: asking and describing the way, understanding public transport timetables, at the railway station / preposition: mit, location prepositions: an, auf, hinter, in,, neben, über, unter, vor, zwischen, bei.
12. The customer is king: time, services, polite requests, written and telephone messages / temporal prepositions:vor, nach, bei, in, bis, ab, polite forms: würde, könnte, verbs with prefixes: an-, aus-, auf-, zumachen.
13. New clothes: items of clothing, likes and dislikes, preferences, in a department store / demonstrative pronouns: der, die, das etc., gut, gern, viel, verb: mögen, Dative personal pronouns mir, dir, etc., verbs with Dative: gefallen, gehören, passen, stehen
14. Celebrations: dates, people, reasons, invitations etc / ordinal numbers, Accusative personal pronouns: mich, dich etc, denn, verb: werden.

Lehrbuch: Schritte International 2, Niebisch, Hueber Verlag

Prerequisites:
n.a.

Lecture/Seminar profile:

German Language A 2.2 (DAF_A2.2_UE)

Degree course	FWE
Course title	German Language A 2.2
Course code	DAF_A2.2_UE
Level	Bachelor
Term	SS25
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	3
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Topics and Grammar:
8. At the Weekend: expressing contrasts, wishes, suggestions, weekend activities, events / trotzdem, Subjunctive II: wäre, hätte, würde, könnte
9. Consumer World: Describing objects, comparing, spending / declination of adjectives (ein…), comparison and superlative, als, wie
10. Communication: understanding impersonal information, describing products, answering machines, male and female ways of talking…/ Passive Voice, declination of adjectives (der…), word formation: un-,-los etc.
11. On the Way: describing routes, safety, traffic news, travel weather / more prepostions, conjunction:deshalb, adjective formation: -bar, -ig,-isch
12. Travel: organising travel: destinations, ads, booking travel, writing postcards, dream trip…/ more prepositions, declination of article-less nouns, more temporal prepostions.
13. Money: at the bank, getting payment method information, services / indirect questions, lassen (etwas machen lassen)
14. Stages of Life: talking about the past, wishes, suggestions and advice, nicknames, statistics, life stories / Repetition/reinforcement of previous grammar topics

Lehrbuch: Schritte International, Niebisch, Hueber Verlag

Prerequisites:

n.a.

Lecture/Seminar profile:

German Language B 1.2 (DAF_B1.2_UE)

Degree course	FWE
Course title	German Language B 1.2
Course code	DAF_B1.2_UE
Level	Bachelor
Term	SS25
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	3
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Topics and Grammar:

8. Among Friends: An Acquaintance. Du oder Sie? Describing friends and colleagues and talking about them. Tips for single people. Grammar: conjunction falls, relative clause with prepositions, adjectives used as nouns, n-declination, je…desto..
9. Technology in Everyday Life: Computers. Appearance and Reality. Time. Instructionn Manuals. Grammar: als ob…+ Konjunktiv, conjunction während, conjunction nachdem,conjuntion: bevor
10. Products: Murphy's Law. Breakdowns and Mishaps. Describing products. Trade and Services. Women in Advertising.
Grammar: Alles, was…, wo….,present participle as adjective, two-part conjunctions: weder…noch, sowohl…als auch
11. People: plans and intentions. Rules of Behaviour. Other countries and their customs. Grammar: the Future Tense. Prepositions: innerhalb, außerhalb, Conjunction: da
12. Advice and Help: Describing a problem and asking and giving advice. Understanding a text. Speaking about role models. Stating an opinion. Grammar: conjunctions seit, seitdem,bis, indem, ohne…dass, außer
13. Politics and History: political decisions, newspaper reports, German history since 1945, political parties and politicians
Grammar: adjective declination with comparative and superlative, perfect participle as an adjective, Past Passive.
14. At Home in the World: Germany in the World. Curious Facts from Europe. Talking about Home.

(No new grammar in this final chapter)

Lehrbuch: Schritte International, Niebisch, Hueber Verlag

Prerequisites:
n.a.

Lecture/Seminar profile:

German Language B 2.2 (DAF_B2.2_UE)

Degree course	FWE
Course title	German Language B 2.2
Course code	DAF_B2.2_UE
Level	Bachelor
Term	SS25
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	3
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Topics:

Beruf/Liebe/Medien/Gesund leben/Mobilität

Grammar: Conjunctions and Prepositions I, Compound Nouns, Conjunctions and Prepositions II, Conjunctions and Prepositions III, Passive Voice

Lehrbuch: EM neu Hauptkurs Niveaustufe B2, Hueber

Prerequisites:
n.a.

Lecture/Seminar profile:

German Language C 1.2 (DAF_C1.2_UE)

Degree course	FWE
Course title	German Language C 1.2
Course code	DAF_C1.2_UE
Level	Bachelor
Term	SS25
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	3
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Lehrbuch: EM neu Hauptkurs Niveaustufe C1, Hueber, 2008

1. Describing people. Dream men and women. Paraphrases. Sentences with case completions. Sentences with prepositional complements. Sentences with subordinate clauses. Prepositional pronouns. Salary. Adverbs.
2. Suppositions. Crime and Punishment. Noun-Verb connections. Lies and Lie Detectors
3. Idioms. Firm connections. Internet research. Verbs. Nouns. Reading Strategies. Temporal prepositions.
4. Biographies. Innovative design. Modal Verbs
5. Economics and Globalisation. World Food Supply/We Feed The World. Advanced Grammar: Passive, Participle 1, Participle 2, Adjectives. Word Snakes. Time Travel.

Prerequisites:
n.a.

Lecture/Seminar profile:

English IV (22_ENG4UE)

Degree course	IPEM.ba
Course title	English IV
Course code	22_ENG4UE
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
The Language of Negotiations.
Demanding technical and scientific texts
Deepening the technical vocabulary: Exercise to vocabulary topics materials, process engineering, robotics, industry 4.0 etc.

Prerequisites:
n.a.

Lecture/Seminar profile:

Project Management (22_PRM4IL)

Degree course	IPEM.ba
Course title	Project Management
Course code	22_PRM4IL
Level	Bachelor
Term	SS25
Lecturer	David Schmidtbauer
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Project Management as a Business Process
Project Manual
Methods to manage projects
Methods to start projects
Project delimination and project context
Design of the project organization
Project planning
Methods to coordinate projects
Methods to monitor projects
Methods for project marketing
Methods to management project crises
Methods for project closure
Management of project-oriented organizations (overview)

Prerequisites:
n.a.

Lecture/Seminar profile:

Programming (22_PRO4IL)

Degree course	IPEM.ba
Course title	Programming
Course code	22_PRO4IL
Level	Bachelor
Term	SS25
Lecturer	Georg Hermann Richard Hackenberg
Contact hours per week	3
ECTS credits	4
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Fundamentals of programming and introduction to a higher programming language.
Basic development methodology with an integrated development environment (IDE)
Simple data types and fields
Basics input/output techniques via screen
Simple flow structures (if, switch-case, for, while, do-while)
Simple self-defined math/functions and use of standard libraries (Math, Random, String, File, ...)
Unit testing
Introduction to object-oriented programming - class concepts
Development of small programs as independent project tasks
Use of standard classes tor character manipulation and file manipulation

Prerequisites:
n.a.

Lecture/Seminar profile:

Digital Marketing (24_DMA2IL)

Degree course	IPEM.ba
Course title	Digital Marketing
Course code	24_DMA2IL
Level	Bachelor
Term	SS25
Lecturer	Anne Hadler
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Importance and influence of digitalization on market-oriented management
Importance of Business Intelligence for market-oriented management in a digital environment
Digital branding goals and strategies
Channels and tools in digital marekting: Online Marketing, Social Media Marketing, Blogs, ...
Marketing Automation and Artificial Intelligence in Digital Marketing

Prerequisites:
n.a.

Lecture/Seminar profile:

Electrical Engineering (24_ETE2IL)

Degree course	IPEM.ba
Course title	Electrical Engineering
Course code	24_ETE2IL
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Presentation of physical quantities, SI-units, basic quantities in electric and magnetic field (capacitance, inductance), direct current technology, withestands networks, Kirchhoff's laws, network calculation, substitute voltage/replacement current source, tempverbal quantities, types of tempverbal currents and voltages, presentation of tempverbal quantities. Characteristics of tempverbal phenomena, passive components, general relationships of current, voltage, energy, power on passive components with arbitrary tempverbal phenomena. Alternating current technique, Basis in the complex alternating current technique, Complex calculation, Network calculation, Power factor correction.
Calculation and laboratory exercises with practical examples to the contents.

Prerequisites:
n.a.

Lecture/Seminar profile:

Technology- & Innovationsmanagement I (24_INO2VO)

Degree course	IPEM.ba
Course title	Technology- & Innovationsmanagement I
Course code	24_INO2VO
Level	Bachelor
Term	SS25
Lecturer	Kristiana Roth
Contact hours per week	1
ECTS credits	1
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Importance of creative problem solving
Creativity of the individual (e.g. principles of convergent and divergent thinking)
Fostering team creativity
Organization and implementation of creativity workshops
Framework conditions for creativity in companies, culture of innovation
Creativity techniques & techniques of idea evaluation

Exercise: Application of the topics discussed in the lecture on the basis of case studies from business practice (focus: creativity techniques & techniques of idea evaluation)

Prerequisites:
n.a.

Lecture/Seminar profile:

Mathematics II (24_MAT2VO)

Degree course	IPEM.ba
Course title	Mathematics II
Course code	24_MAT2VO
Level	Bachelor
Term	SS25
Lecturer	Karin Nachbagauer
Contact hours per week	2
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Integral calculus: definite and indefinite integral, integration methods (partial integration, substitution, partial fraction decomposition), improper integrals, applications of integral calculus (area, arc length, volume and surface area of a body of revolution, center of gravity, moment of inertia, work), derivation of formulas using differential reasoning.
Ordinary differential equations: Concept formation, separable differential equations, linear differential equations with constant coefficients, setting up differential equations, Laplace transform, applications in mechanics and electrical engineering.
Mathematics software: Use of a computer algebra system in the above chapters.

Prerequisites:
n.a.

Lecture/Seminar profile:

Machine Elements (24_MEL2VO)

Degree course	IPEM.ba
Course title	Machine Elements
Course code	24_MEL2VO
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Basis in the standardization
Stress and load types: Stress distribution
Stress hypotherses
Time-dependent loading: Wöhler diagram, fatigue strength diagrams
Shaft calculation: fatigue strength diagram, notch effect, bending critical speed
Shaft-hub connections
Bolted connections
Positioning: Oils and lubricants, sliding position, seals, rolling position r

Calculation exercises with practical examples to the contents of the Lecture.

Prerequisites:
n.a.

Lecture/Seminar profile:

Market Research I (24_MFO2VO)

Degree course	IPEM.ba
Course title	Market Research I
Course code	24_MFO2VO
Level	Bachelor
Term	SS25
Lecturer	Alexander Brendel-Schauberger
Contact hours per week	1
ECTS credits	1
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Market research - Basis
Market research process
Secondary research vs. primary research
Qualitative research vs. quantitative research
Research Design
Sample selection
Inofmration collection and processing
Selected methods of secondary research (market monitoring, competitor analyses, press/patent/trademark searches, ...)
Basics analysis methods of market research
Application of the knowledge in the context of a market research project (focus: qualitative research).

Prerequisites:
n.a.

Lecture/Seminar profile:

Bionics and Examples of Lightweight Structures (21_BIO4VO)

Degree course	LCW.ba
Course title	Bionics and Examples of Lightweight Structures
Course code	21_BIO4VO
Level	Bachelor
Term	SS25
Lecturer	Franz Maier
Contact hours per week	1
ECTS credits	2
Course type	Lecture
Examinations	written examination
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
Summer Semester (German/English):

Selected examples of lightweight design:

- Aviation

- Automotive design (automotive, truck, etc.)

- Power generation (wind power, water power, etc.)

- Sports

- Ship Building

Winter Semester (German):

Basics of bionics

Analysis of the mechanical fundamentals of selected examples from nature

Design structures in nature and possibilities for their transformation to solve technical problems

Prerequisites:
Technische Mechanik, Werkstoffkunde Metalle und Nichtmetalle

Lecture/Seminar profile:

Internship (21_BRP6PT)

Degree course	LCW.ba
Course title	Internship
Course code	21_BRP6PT
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	0
ECTS credits	18
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
The topic of the professional internship is preferably oriented towards concrete problems of industrial practice. A coherent task corresponding to the qualification level of the students, preferably with project character, is studied. The research and development work is under the supervision and guidance of the FH supervisor and the supervisor from the company.

Prerequisites:
all preceding courses of the study program

Lecture/Seminar profile:

Bionics (23_BIO4VO)

Degree course	LCW.ba
Course title	Bionics
Course code	23_BIO4VO
Level	Bachelor
Term	SS25
Lecturer	Franz Maier
Contact hours per week	1
ECTS credits	2
Course type	Lecture
Examinations	written examination
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
Summer Semester (German/English):

Selected examples of lightweight design:

- Aviation

- Automotive design (automotive, truck, etc.)

- Power generation (wind power, water power, etc.)

- Sports

- Ship Building

Winter Semester (German):

Basics of bionics

Analysis of the mechanical fundamentals of selected examples from nature

Design structures in nature and possibilities for their transformation to solve technical problems

Prerequisites:
Technische Mechanik, Werkstoffkunde Metalle und Nichtmetalle

Lecture/Seminar profile:

English II (23_ENG2UE)

Degree course	LCW.ba
Course title	English II
Course code	23_ENG2UE
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	1
ECTS credits	1
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
- deliver a presentation in a clearly structured and fluent manner

- discuss a topic relevant to the subject

- respond to questions on the topic

- Introduce area of responsibility/position/projects/company

Prerequisites:
n.a.

Lecture/Seminar profile:

Interdisciplinary Project 1 (23_IPA4PT)

Degree course	LCW.ba
Course title	Interdisciplinary Project 1
Course code	23_IPA4PT
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	4
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
The primary objectives of these courses are:
Understand technical and organizational contexts and apply holistic approaches
Recognize and structure problems and develop creative solution strategies for them
Develop communicative and cooperative skills and the ability to deal with conflict
Develop a willingness to act and take responsibility
apply the knowledge acquired in the courses to larger, related practical problems
This means, among other things, that project work is preferably carried out in groups.
Interdisciplinary application-related project work from the specialist areas of materials and processing technology and/or design and simulation, in each case in coordination with the specialist knowledge of the students from the previous semesters.
As far as possible, great importance is attached to practical tasks from industry or research projects. The course's laboratory facilities can be used for this purpose as required.

Prerequisites:
n.a.

Lecture/Seminar profile:

Analytical Chemistry II (23_AYC2VO_ENG)

Degree course	LTE.ba
Course title	Analytical Chemistry II
Course code	23_AYC2VO_ENG
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	1
ECTS credits	1
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
- Fundamentals: principles of interaction between groups of substances, interactions.

- Analytics: Introduction to organic qualitative analysis, thin layer chromatography, column chromatography (GC, LC), UV, fluorescence, mass spectroscopy, immunochemical methods, FT-IR.

Prerequisites:
Fundamentals of Chemistry I, Stoichiometry I, Analytical Chemistry I

Lecture/Seminar profile:

Business Administration (23_BWL2IL_ENG)

Degree course	LTE.ba
Course title	Business Administration
Course code	23_BWL2IL_ENG
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
- Advanced Cost Accounting;

- Basics of standard costing

- Basics of investment accounting;

- Basics of financing.

Prerequisites:
Business Administration I

Lecture/Seminar profile:

Mathematics II (23_MAT2IL_ENG)

Degree course	LTE.ba
Course title	Mathematics II
Course code	23_MAT2IL_ENG
Level	Bachelor
Term	SS25
Lecturer	Karin Nachbagauer
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
- definite and indefinite integral, simple integration methods, applications of integral calculus.

- separable differential equations, linear differential equations with constant coefficients, modeling of scientific problems with the help of differential equations.

- linear and nonlinear regression.

- Use of a computer algebra system in the above areas.

Prerequisites:
Mathematics 1

Lecture/Seminar profile:

Microbiology I (23_MIB1IL_ENG)

Degree course	LTE.ba
Course title	Microbiology I
Course code	23_MIB1IL_ENG
Level	Bachelor
Term	SS25
Lecturer	Claudia Probst
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
-Principles of microbiology (systematics of microorganisms, microbial lifestyles, nutrition and metabolism, growth and growth control);

-Bacteriology: relevance in the human microbiome,

-Industrial microbiology in biotechnology, environmental technology, food technology and agricultural technology - Part 1.

Prerequisites:
n.a.

Lecture/Seminar profile:

Raw Material Sciences (23_RSK2VO_ENG)

Degree course	LTE.ba
Course title	Raw Material Sciences
Course code	23_RSK2VO_ENG
Level	Bachelor
Term	SS25
Lecturer	Claudia Probst
Contact hours per week	2
ECTS credits	2
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
- Overview of animal and plant food raw materials (meat, cereals, oil and legumes, vegetables, fruits, milk and eggs, vegetable oils)

- Overview of the main production processes for animal and plant food raw materials.

Prerequisites:
n.a.

Lecture/Seminar profile:

Basics Chemistry (24_CHE2VO_ENG)

Degree course	LTE.ba
Course title	Basics Chemistry
Course code	24_CHE2VO_ENG
Level	Bachelor
Term	SS25
Lecturer	Michaela Kröppl
Contact hours per week	2
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
- Fundamentals of organic chemistry;

- Proteins (amino acids, peptides, enzymes);

- Carbohydrates (sugars, oligo- and polysaccharides)

- Lipids (triglycerides, phospholipids, fatty acids);

- Nucleic acids;

- Chemical reactions: of the main groups of substances, soaps and surfactants;

- Nomenclature.

Prerequisites:
Fundamentals of Chemistry I, Stoichiometry I, Analytical Chemistry I

Lecture/Seminar profile:

Chemical Technology (20_CHT6VO)

Degree course	VTP.ba
Course title	Chemical Technology
Course code	20_CHT6VO_Gr.V
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Lecture
Examinations	oral or written examination
Language of instruction	English
Places for international students	4

Learning objectives:
n.a.

Content:
Technical scale production processes are discussed in terms of raw materials, products, technology as well as their network of material and energy flow.
Examples for the production of inorganic (e.g. sulfuric acid, ammonia) and organic products (e.g. ethene, methanol) are given. Also selected examples for production processes based on microorganism and enzymes are given.

Prerequisites:
n.a.

Lecture/Seminar profile:

Project IV (23_PRO4PT)

Degree course	WFT.ba
Course title	Project IV
Course code	23_PRO4PT
Level	Bachelor
Term	SS25
Lecturer	
Contact hours per week	0,25
ECTS credits	4
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	1

Learning objectives:
n.a.

Content:
Preferential objectives of this course are:
• to comprehend technical and organisational coherences and apply integral approaches
• identify and structure problems and to develop creative strategies for their solutions
• to develop co-operative and communicative competences and conflict management ability
• to develop readiness to act and to assume responsibility
• realisation of the acquired knowledge within practical problems
These objectives require that the projects are organised as team work.
The topics of these multidisciplinary and applied projects correspond with the branches of Material- and Processing Technology and are in accordance with the student's knowledge acquired in the proceeding semesters.
A high value is set on practical definition of the projects, if possible topics in cooperation with industry are chosen. As and when required the laboratory equipment of the course study is used

Prerequisites:
all preceding courses of the study program

Lecture/Seminar profile:

Plant Construction Contracts (24_PCC2IL)

Degree course	AB.ma
Course title	Plant Construction Contracts
Course code	24_PCC2IL_Gr.V
Level	Master
Term	SS25
Lecturer	Albert Angerbauer
Contact hours per week	2
ECTS credits	4
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
•The course is based on a specific given contract for the supply of a major industrial plant (arr. 250 pages).
•Types of contract (supply, service agreement, "turn key") operator models
•The major components of plant contract
•The performance directory and its forms
•Specification, documentation and their legal significance
•Liability and guarantees
•Forms of cooperation in plant
•Patents, licenses, safeguard clauses
•A semester work in a group of three students (arr. 10 to 20 pages) and an exam on a given case has to be done.

Prerequisite:
- International contract law (ABma, 1. term):
- Basics of international legal terms for contracts
- Some general legal experience (e.g. in an economic background) should also be reasonable

Prerequisites:
n.a.

Lecture/Seminar profile:

Management Accounting (20_ACC2IL)

Degree course	AMM.ma
Course title	Management Accounting
Course code	20_ACC2IL
Level	Master
Term	SS25
Lecturer	Florian Wesz
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
Students know
- the goals and objectives of strategic and operative management accounting. They know and understand budgeting procedures and methods, as well as the most important analytical tools and key performance indicators.
- the specifics of R&D and project management accounting.
- specific types of financing and the structure of capital and financial markets and are able to evaluate various types of financing according to their suitability and effectiveness. They are also familiar with finacial planning methods and cash flow statements and are able to analyze and interpret financial ratios

Students are able to
- develop a product life cycle concept for a technical product focused on costs and financial KPIs.
- apply the concept of scientific reporting and writing
- to define and answer scientific questions and present and discuss research results.
- evaluate various types of financing according to their suitability and effectiveness.
- analyze and interpret financial ratios

Content:
- Fundamentals of management accounting
- Corporate leadership
- Strategic and operative management accounting
- Budgeting
- Methods and key figures in management accounting
- Analysis (target-performance comparison, etc.)

- Specifics of R&D and project management accounting

Prerequisites:
According to the prerequisites for degree programme access

Lecture/Seminar profile:

Automotive IT Systems 2 (20_AIT2IL)

Degree course	AMM.ma
Course title	Automotive IT Systems 2
Course code	20_AIT2IL
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
Students know and understand
- the fundamentals of network technology
- network protocols
- bus systems in motor vehicles

Students can
- estimate and evaluate the uses of network technologies (particu-larly in motor vehicles)
- use their knowledge to design and implement networks and communication structures and to choose suitable hard-and soft-ware

Content:
- Basics of LAN network technology
- Transfer media (TP, Coax, Fiber), cabling structures
- Basics of network protocols (IPv4, IPv6, TCP-protocol stack,...)
- Access processes (CSMA/CD, Token Passing, ...)
- OSI-reference model
- special network protocols (Routingprotocols, Real-Time-protocols)
- Bus systems in vehicles (LIN, CAN, TTCAN, FlexRay, MOST))

Prerequisites:
Basic knowledge programming

Lecture/Seminar profile:

Drive Systems and E-Mobility I (20_DSE2IL)

Degree course	AMM.ma
Course title	Drive Systems and E-Mobility I
Course code	20_DSE2IL
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
Students know
- the theoretical principles and technical relationships as well as the function of vehicle propulsion systems (spectrum: combustion engines-hybrid drives-E-drives- further alternative drives)

Students can
- solve subject-specific problems during the development and integration of different drive concepts into the overall vehicle concept.

Content:
ISO 26262 („Road vehicles – Functional safety“)
- Procedural model, activities and methods in development and production to guarantee functional safety
- Parts of the norm:
  - management of functional safety
  - concept phase
  - product development: system level
  - product development: hardware level
  - product development: software level
  - production, operation and taking out of operation
  - support processes
  - ASIL- and safety-oriented analyses

Prerequisites:

n.a.

Lecture/Seminar profile:

Drive Train Control Systems (20_DTC2IL)

Degree course	AMM.ma
Course title	Drive Train Control Systems
Course code	20_DTC2IL
Level	Master
Term	SS25
Lecturer	
Contact hours per week	3
ECTS credits	4
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
Students have sound knowledge
- of regulation- and safety systems in the drive train
- components of mechatronic regulation- and safety systems in the drive train

Students can
- design and realise simple regulation systems
- evaluate, model and simulate safety systems like ASR, differen-tial locking systems with regard to functionality

Content:
- Regulation-and safety systems in the drive train
- speed regulation systems
- Control of gears
- Electronic differential systems
- Drive slip regulation systems
- Anti-blocking systems

Prerequisites:
n.a.

Lecture/Seminar profile:

Functional Safety (20_FUS2IL)

Degree course	AMM.ma
Course title	Functional Safety
Course code	20_FUS2IL
Level	Master
Term	SS25
Lecturer	Christian Ertl
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
Students are sensitive for safety-relevant electrical/electronic systems in motor vehicles

Students know parts of the norm ISO 26262 („Road vehicles – Functional safety“)

Content:
ISO 26262 („Road vehicles – Functional safety“)
- Procedural model, activities and methods in development and production to guarantee functional safety
- Parts of the norm:
  - management of functional safety
  - concept phase
  - product development: system level
  - product development: hardware level
  - product development: software level
  - production, operation and taking out of operation
  - support processes
  - ASIL- and safety-oriented analyses

Prerequisites:
n.a.

Lecture/Seminar profile:

Market Oriented Management (20_MOM2IL)

Degree course	AMM.ma
Course title	Market Oriented Management
Course code	20_MOM2IL
Level	Master
Term	SS25
Lecturer	Alexander Brendel-Schauberger
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
Students know
- relevant definitions of market oriented management and understand marketing as a holistic and process oriented approach. They have a sound overview of tasks and goals, as well as on the organizational integration of marketing.
- basic competitive strategies and their influence on the marketing mix.
- most important methods and tools of market research and are able to apply them to a project.
- central customer behavior models.
- and understand the basic principles of brand management.
- the specific aspects of high tech marketing.
- specific marketing aspects in different vehicle industries

Students are able to
- develop a marketing concept for a technical product.

Content:
- Marketing Process
- Customer Behavior and Adoption
- Marketing Research (Basics)
- Strategic Market Planning
- Marketing Mix (B2B)
- Positioning & Brand Management
- Special aspects of high tech marketing
- Specific aspects of automotive marketing (OEM B2C/B2B, First/Second/Third Tier Suppliers)

- Basic principles of international marketing management

Prerequisites:
According to the prerequisites for degree programme access

Lecture/Seminar profile:

Automotive Quality Management 2 (20_QMA2IL)

Degree course	AMM.ma
Course title	Automotive Quality Management 2
Course code	20_QMA2IL
Level	Master
Term	SS25
Lecturer	Thomas Junggeburth
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
Based on the competences of AQM1, the students elaborate a detailed knowledge in important areas of an applied quality management system based on ISO 9001 and IATF 16949.

The students can significantly contribute during the implement of a quality management system according the requirements of ISO 9001 and ISO/TS 16949 and they are educated and trained to internally audit such a system.

The course content and learning outcomes are closely coordinated with the VDA, so that by passing an external examination the corresponding certificate (internal auditor) can be acquired.

A large number of practical case studies, which are carried out by the students, enables the students to practice the theoretical material.

Content:
- Quality objectives
- Automotive process management
- Requirements for processes and products
- Project management during design and development of automotive products
- Risk management
- Supplier management
- Maturity level assurance for new parts
- Various Q-Methods
- Analyses of field returns
- Audits as a management tool

Prerequisites:
According to the prerequisites for degree programme access

Lecture/Seminar profile:

Master Thesis (MA4PT)

Degree course	AT.ma
Course title	Master Thesis
Course code	MA4PT
Level	Master
Term	SS25
Lecturer	
Contact hours per week	0
ECTS credits	27
Course type	Master's thesis
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	5

Learning objectives:
n.a.

Content:
The Master's theses are preferably oriented towards concrete problems of industrial practice and are intended to promote interdisciplinary Summary of the experiences of the professional practice on the basis of the knowledge gained in the lectures up to this point and exercises to promote the basic level of knowledge.

Prerequisites:
n.a.

Lecture/Seminar profile:

Negotiation & moderation (KFK2UE)

Degree course	BI.ma
Course title	Negotiation & moderation
Course code	KFK2UE
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Harvard negotiation concept
Forms of argumentation in the conduct of negotiations
Efficient preparation and successful conduct of a negotiation
Creating results that satisfy both sides (win-win situations)
Review and further development of the own current negotiating style
Basics of moderation/meeting moderation
Role, attitude, tasks of the moderator or leader of meeting
Preparation, implementation, follow-up of a moderation/meeting
Methods/means of a moderation/meeting
Intervention techniques for the control of group processes (review of targets, technique of formulating questions, feedback technique, visual discussion technique, ...)

Prerequisites:
n.a.

Lecture/Seminar profile:

Leadership (KFK4UE)

Degree course	BI.ma
Course title	Leadership
Course code	KFK4UE
Level	Master
Term	SS25
Lecturer	
Contact hours per week	1
ECTS credits	1
Course type	Practice-oriented session
Examinations	oral or written examination
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Leadership:
Models, functions and tasks of leadership;
Key competencies of managers;
Connection between leadership and personality;
The role of the executive and expectations towards this role;
The executive as a multiplier of the goals and values of a company;
Management and personnel development;
Influences on leadership (external and internal conditions);
Cooperative leadership;
Dealing with power and information;
Marketing:
Key concepts, tasks, strategies and tools of Marketing

Prerequisites:
n.a.

Lecture/Seminar profile:

Advanced Control Engineering (21_CEN2LE)

Degree course	EE.ma
Course title	Advanced Control Engineering
Course code	21_CEN2LE
Level	Master
Term	SS25
Lecturer	Rastko Zivanovic
Contact hours per week	2
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
The students know the relevant control approaches and concrete realization for energy systems and are able to develop stable and robust control algorithms.
They are able to develop and design special control systems with respect to:
• Intercommunication delays between systems
• Modern approaches like digital system and signal processing
• Nonlinearity
Students learn to realize control systems as well as state estimation and parameter identification programs.

Content:
Control approaches for energy systems (P, Q, U, f control, control approaches in smart grid systems, etc.)
Control approaches for battery, wind, PV and charging and e-car systems
PLC's
Approaches for robust control algorithms for nonlinear systems and systems with dead times
Cascaded control systems
Intercommunication between control systems
PLC programming and PLC program development

Prerequisites:
Advanced Mathematics, essentials of measurement and control engineering, electronics and semiconductors, essentials of electrical engineering and data acquisition software systems.

Lecture/Seminar profile:

Electromagnetic Field Theory in Multiphysics Systems (21_EFT2LE)

Degree course	EE.ma
Course title	Electromagnetic Field Theory in Multiphysics Systems
Course code	21_EFT2LE
Level	Master
Term	SS25
Lecturer	Rastko Zivanovic
Contact hours per week	2
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
Students understand the full Maxwell's Equations and are able to solve them with analytical approaches as well as with numerical methods.
They know the approaches to interlink the electrodynamics with other physics disciplines and are able to model the problem for simple multi physic problems (simple heat transfer or flow boundary conditions).
Students are able to classify the single problems of electromagnetic fields (stationary, quasi stationary, non-stationary, flow field, electric field, magnetic field and coupling effects). Students are understanding special applications of the Maxwell's Equations as basic EMC and EMI principles, induction and influencing, displacement current, non-uniform and non-stationary flow fields, antennas. Students can develop electromagnetic numeric models and are able to solve them. They are able to link these problems to other simple physics problems.
Students know the principles to improve convergence stability with special respect to nonlinear material parameter and are able to influence to solver to achieve convergence.
Students are able to model simple problems and to solve them analytically.

Content:
Full Maxwell Equations (MES)
· Types of MES / problems of electromagnetic fields
· Application MES for the development of models
· Analytic solutions for MES
· Numeric solutions for MES
· Interpretation and reflection of solutions
Combination of MES with simple mechanical, heat flow, and flow formulations
Applied MES for engineering problems

Prerequisites:

Advanced Mathematics
Basics of electrical engineering, basic essentials of electromagnetic fields, essentials of thermodynamics, essentials of heat flow, essentials of fluid dynamics

Lecture/Seminar profile:

Electromagnetic Field Theory in Multiphysics Systems (21_EFT2PR)

Degree course	EE.ma
Course title	Electromagnetic Field Theory in Multiphysics Systems
Course code	21_EFT2PR
Level	Master
Term	SS25
Lecturer	Rastko Zivanovic
Contact hours per week	2
ECTS credits	3
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
See EFT Lecture

Content:
Full Maxwell Equations (MES)
· Types of MES / problems of electromagnetic fields
· Application MES for the development of models
· Analytic solutions for MES
· Numeric solutions for MES
· Interpretation and reflection of solutions
Combination of MES with simple mechanical, heat flow, and flow formulations
Applied MES for engineering problems

Please note: Students enrolled in this course must also enroll in 21_EFT2LE

Prerequisites:
Advanced Mathematics
Basics of electrical engineering, basic essentials of electromagnetic fields, essentials of thermodynamics, essentials of heat flow, essentials of fluid dynamics

Lecture/Seminar profile:

Advanced Power Electronics (21_PET2LE)

Degree course	EE.ma
Course title	Advanced Power Electronics
Course code	21_PET2LE
Level	Master
Term	SS25
Lecturer	Kayhan Ince
Contact hours per week	2
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
Students know the fundamental circuits for specific power electronics converter applications and are able to derive the essential voltage and current shapes from a given power electronics circuit.
They have awareness of the different individual power semiconductors and when to select which of them in regard of the requirements. The students know how to drive the power semiconductors properly and they know about the design procedure step by step from idea to final prototype.

Content:
Materials and components for power electronic components and modern power electronics technologies.
Magnet material and characterization.
Control approaches for power electronics.
Special power electronics applications - Power electronics for energy applications --> High current energy conversion & High voltage energy conversion
· Hybrid switching
· E-cars
· Battery systems
· PV systems
Filtering and filters (active/passive)
Simple EMC and EMI design principles
Designing of power electronics circuits and lay out approaches

Prerequisites:
Introductions into Power Electronics, Basics of Electrical Engineering

Lecture/Seminar profile:

Computer Aided Industrial Design I (20_CAID2UE)

Degree course	IPM.ma
Course title	Computer Aided Industrial Design I
Course code	20_CAID2UE
Level	Master
Term	SS25
Lecturer	Bernd Tomasini
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	oral or written examination
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
• Advanced CAID freeform modelling and introduction to CAID rendering
• CAID software packages: Autodesk Alias or Rhino 3D

Prerequisite: General basic knowledge of 3D CAD

Prerequisites:
Prior knowledge in product concept design.

Lecture/Seminar profile:

Change Management (20_CHM2SE)

Degree course	IPM.ma
Course title	Change Management
Course code	20_CHM2SE
Level	Master
Term	SS25
Lecturer	Bianca Anna Maria Prommer
Contact hours per week	1
ECTS credits	1
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
•Understanding the role of change management as driver for innovation management and new business develop-ment
•Build knowledge on ways and tools to identify change necessities, barriers to change, and drivers of change
•Ability to apply tools for effective corporate change man-agement

Prerequisites:
Fundamentals of Marketing/Management

Lecture/Seminar profile:

Controlling (20_CTR2IL)

Degree course	IPM.ma
Course title	Controlling
Course code	20_CTR2IL
Level	Master
Term	SS25
Lecturer	Sandra Mühlböck
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Basics of controlling
• Corporate leadership and control
• Strategic and operative controlling
• Budgeting
• Methods and key figures in controlling
• Analysis (target-performance comparison, etc.)
• Specifics of R&D and project controlling

Prerequisites:
n.a.

Lecture/Seminar profile:

Data Analysis (20_DAA2IL)

Degree course	IPM.ma
Course title	Data Analysis
Course code	20_DAA2IL
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	6

Learning objectives:
n.a.

Content:
- Methods of analyzing different kinds of data
- Extract, transform, load (ETL) process
- Data warehousing and Business Intelligence
- Data visualization and reportingc

Prerequisites:
n.a.

Lecture/Seminar profile:

Design Theory (20_DET2IL)

Degree course	IPM.ma
Course title	Design Theory
Course code	20_DET2IL
Level	Master
Term	SS25
Lecturer	Markus Kretschmer
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
• Selected theoretical, methodological and applied problems from the field of design
• In-depth examination of selected aspects of the history and future of design

Prerequisites:
Prior knowledge in product concept design.

Lecture/Seminar profile:

Design & Prototyping (20_EHW2SE)

Degree course	IPM.ma
Course title	Design & Prototyping
Course code	20_EHW2SE
Level	Master
Term	SS25
Lecturer	Markus Kretschmer
Contact hours per week	2
ECTS credits	3
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
• Introduction to hardware model construction methodologies
• Introduction to tools and materials for design model construction

Prerequisites:
Prior knowledge in product concept design.

Lecture/Seminar profile:

Intercultural Management (20_IKM2SE)

Degree course	IPM.ma
Course title	Intercultural Management
Course code	20_IKM2SE
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	6

Learning objectives:
n.a.

Content:
• Intercultural decision-making and responsibility for successful management of intercultural business situations
• Acquisition of knowledge of one's own and of different cultures
• Overview of culturally different management styles
• Specifics of international and intercultural project management.
• Synergy effects
• Development of intercultural key competencies

Prerequisites:
n.a.

Lecture/Seminar profile:

International Key Account Management (20_KAM2IL)

Degree course	IPM.ma
Course title	International Key Account Management
Course code	20_KAM2IL
Level	Master
Term	SS25
Lecturer	Bernhard Martin Freiseisen
Contact hours per week	1
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Relationship marketing as the basis for successful key account management
• Relationship marketing vs transactional marketing
• Principles of relationship marketing
• Process-oriented approach to relationship marketing
• Customer segmentation and segment-specific programmes
Marketing policy and key account management in international business
• Sales and distribution channel systems and sales organizations in international business
• Management of sales organisations in international business
• Basics of marketing policy in international business
• Basics of international sales management
• Cross-cultural communication: Cultural factors and their importance for sales success in international business
• Global sales process
Developments, challenges and functions in key account management
• Types of key account management
• A successful account manager's toolkit

Prerequisites:
Fundamentals of Marketing/Management

Lecture/Seminar profile:

Negotiation (20_KFK2UE)

Degree course	IPM.ma
Course title	Negotiation
Course code	20_KFK2UE
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	4

Learning objectives:
n.a.

Content:
Harvard negotiating approach
Types of argumentation in negotiation
Preparing efficiently for a negotiation and carrying it out successfully
Obtaining results that satisfy both sides (win-win situations)
Understanding negotiating partners better and concluding negotiations
Mastering difficult negotiation situations with confidence
Examining and developing individual current negotiating styles

Prerequisites:
n.a.

Lecture/Seminar profile:

Product Lifecycle Management (20_LCM2IL)

Degree course	IPM.ma
Course title	Product Lifecycle Management
Course code	20_LCM2IL
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Core processes in product lifecycle management. Components of PLM. Methods and trends in PLM. PLM as the backbone of virtual product creation. Organisational and methodological requirements for launching PLM. Components and core functions of a PLM solution. Input/output management. Integration. Technical infrastructure and system functions. Economic considerations with PLM systems. PLM launch planning.

Prerequisites:
n.a.

Lecture/Seminar profile:

Model Based Engineering - Introduction (20_MBE2IL)

Degree course	IPM.ma
Course title	Model Based Engineering - Introduction
Course code	20_MBE2IL
Level	Master
Term	SS25
Lecturer	Christian Zehetner
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Concepts of system theory and modelling, system theory, system concepts, modelling concepts
Modelling process,
Modelling, mechanical system, electrical system, thermodynamic system, linked system
Transfer function and transfer elements, System characteristics,
Basics and processes of analogue regulation technology, parameters of the control circuit, frequency parameter processes, state regulation,
State space representation of mechatronic systems, analysis of the dynamic behaviour in the state space, design and implementation of linear state regulators, design and implementation of linear state observers
Numerical simulation, concentrated/distributed parametric dynamic systems, processes and faults

Prerequisites:
n.a.

Lecture/Seminar profile:

Model Based Engineering - Introduction (20_MBE2LB)

Degree course	IPM.ma
Course title	Model Based Engineering - Introduction
Course code	20_MBE2LB
Level	Master
Term	SS25
Lecturer	Christian Zehetner
Contact hours per week	1
ECTS credits	2
Course type	Laboratory session
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Identification of modelling parameters, design of regulators and observers, analysis of model behaviour by means of simulation studies, Modelling drive train with concentrated components (‚meta-level‘)

Prerequisites:
n.a.

Lecture/Seminar profile:

Multiprojectmanagement (20_MPM2IL)

Degree course	IPM.ma
Course title	Multi Project Management
Course code	20_MPM2IL
Level	Master
Term	SS25
Lecturer	Markus Feistritzer
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
- Introduction of Product Portfolio Management
- Portfolio Management Processes
  o Portfolio planning (budgeting, linking product portfolio decisions and corporate strategy, roadmapping, ...)

Prerequisites:
n.a.

Lecture/Seminar profile:

Entrepreneurship & New Business Development (20_NBD2IL)

Degree course	IPM.ma
Course title	Entrepreneurship & New Business Development
Course code	20_NBD2IL
Level	Master
Term	SS25
Lecturer	
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Personal requirements for starting a business
• Important contacts when starting a business
• Financing options and the business promotion environment
• Structure, content and form of business plans
• Business concept, product/service description
• Customer value
• Market analysis
• Legal considerations
• Strategic and marketing plans
• Organisational and personnel plans
• Investment planning
• Profit and financial plans

Prerequisites:
Fundamentals of Marketing/Management

Lecture/Seminar profile:

New Product Development (20_PEP2IL)

Degree course	IPM.ma
Course title	New Product Development
Course code	20_PEP2IL
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Designing goal-oriented, efficient, integrated product development and development processes
• Product and service development specifics
• Approach and processes for the development of products and services
• Types of process models and their uses
• Problem-solving models
• Engineering models
• Application of the topics covered using practical problems and case studies

Prerequisites:
n.a.

Lecture/Seminar profile:

Requirements Engineering (20_REE2IL)

Degree course	IPM.ma
Course title	Requirements Engineering
Course code	20_REE2IL
Level	Master
Term	SS25
Lecturer	Andreas Kellner
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
- Definition of requirements - Functional and non-functional requirements - Definition of RE, activities, challenges, problems
- Requirements Elicitation
- Documentation of requirements
- Model-based requirements documentation
- Requirements negotiation, priorisation and validation
- Writing in a Natural Language
- Requirements management

Prerequisites:
n.a.

Lecture/Seminar profile:

Sustainability (20_SUS2IL)

Degree course	IPM.ma
Course title	Sustainability
Course code	20_SUS2IL
Level	Master
Term	SS25
Lecturer	Reinhard Martin Herok
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Basic understanding of sustainability in the context of innovation, design and engineering
• View sustainability as a source of innovation and business creation
• Be able to define, differ and develop sustainability innovations

Prerequisites:
n.a.

Lecture/Seminar profile:

Virtual and Augmented Reality (20_VAR2IL)

Degree course	IPM.ma
Course title	Virtual and Augmented Reality
Course code	20_VAR2IL
Level	Master
Term	SS25
Lecturer	Thomas Schichl
Contact hours per week	1
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
- Human perception and VR
- Hardware components of VR & AR systems
- Software components of VR & AR systems
- Data structure and -formats in VR & AR systems
- Digital Mockup, Mixed Mockup and Virtual Prototypes
- Virtual testing
- Implementation of a simple VR application

Prerequisites:
n.a.

Lecture/Seminar profile:

2D Presentation Techniques & Drawing (20_ZET2SE)

Degree course	IPM.ma
Course title	2D Presentation Techniques & Drawing
Course code	20_ZET2SE
Level	Master
Term	SS25
Lecturer	
Contact hours per week	1
ECTS credits	1
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
• Training in drawing techniques and perspective presentation methods
• Creating sketches and rendering

Prerequisites:
Prior knowledge in product concept design.

Lecture/Seminar profile:

Master Thesis (21_ADA4PT)

Degree course	LCW.ma
Course title	Master Thesis
Course code	21_ADA4PT
Level	Master
Term	SS25
Lecturer	
Contact hours per week	0
ECTS credits	22
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
The master thesis is preferably oriented towards applied problems of industrial practice and are intended to promote the interdisciplinary, synopsis of the experiences of professional practice based on the knowledge acquired in the lectures and exercises.

Prerequisites:
Basic and advanced technical subjects

Lecture/Seminar profile:

Project Work II (21_APR2PT)

Degree course	LCW.ma
Course title	Project Work II
Course code	21_APR2PT
Level	Master
Term	SS25
Lecturer	
Contact hours per week	0,5
ECTS credits	12
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	1

Learning objectives:
n.a.

Content:
Based on the results and/or findings of PR1, a project is defined to give students the opportunity to deepen their knowledge in the same subject area or to learn about other subject areas. Furthermore, the project definition will take into account the growing knowledge base through lectures already completed.

R&D project in the field of materials or production engineering and/or simulation or lightweight design; applied project management; literature study; in-depth and cross-disciplinary application of the acquired knowledge; methodical and scientific approach; practical implementation, analysis, interpretation of experiments or series of experiments; preparation of technical and scientific reports.

Prerequisites:
Bachelor's degree in a technical field of study

Lecture/Seminar profile:

Optimization Methods (21_KOM2IL)

Degree course	LCW.ma
Course title	Optimization Methods
Course code	21_KOM2IL
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	3,5
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
Linear and nonlinear optimization methods of structural mechanics are presented and explained by means of examples.
Topics:
Linear programming (simplex method) with application to optimal truss design and to nonlinear iterative shape optimization.
Nonlinear optimization: graphical solution, simultaneous failure modes, Lagrangian multipliers, search methods without constraints (gradient methods, conjugated gradients, quasi-Newton methods), methods of allowable directions, GRG, SQP, hypercubes, penalty cost methods, approximation techniques, dynamic programming, optimization according to biological principles, optimization for manufacturing tolerances.

Prerequisites:
Higher and Numerical Mathematics, Programming, FEM at Bachelor level of a technical Bachelor studies, Fundamentals of Finite Element Method (FEM), Basic Programming Skills (Python or Matlab), Mathematics (Eigenvalues, gradient)

Lecture/Seminar profile:

Dynamics (23_DYN2IL_Inc)

Degree course	MB.ma
Course title	Dynamics
Course code	23_DYN2IL_Inc
Level	Master
Term	SS25
Lecturer	Martin Egger
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	15

Learning objectives:
Kinematics for particles and rigid bodies.
Kinetics for particles and rigid bodies.
Work and energy methods.
Impulse and Momentum methods.

Content:
Dynamics mathematically describes the motions of bodies under the action of forces. The first part introduces kinematics which deals with the geometry of motion without considering applied forces. The second part, kinetics, relates the forces on bodies to the resulting motions.
Mathematical description of the motion of bodies. Introduction of kinematics without considering applied force.

Prerequisites:
n.a.

Lecture/Seminar profile:

Mechanics of Materials (23_MOM3IL_Inc)

Degree course	MB.ma
Course title	Mechanics of Materials
Course code	23_MOM3IL_Inc
Level	Master
Term	SS25
Lecturer	Christian Zehetner
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	15

Learning objectives:
The students understand the basic concepts of statics (force-equilibrium etc.) as well as the concept of stresses

Content:
basic static concepts (forces, moments, free-body-diagrams, frictional forces), Concept of Stress and Strain; Principal stresses, Mohr-Circle; Linear elastic material law; Thermal strains and stresses; Loading of trusses and beams (axial forces, bending, torsion); Deflection of beams; Energy-methods; Stability of columns.
Prerequisites: Undergraduate Mathematics (Vector- and Matrix-Calculus, Diff.equations; Integrational and differential calculus; Level MAT1/2)
Literature: Beer et al.: “Mechanics of Materials”, 6th Edition, McGrawHill, 2012

Prerequisites:
n.a.

Lecture/Seminar profile:

Applied Statistics (24_APS2IC)

Degree course	SES.ma
Course title	Applied Statistics
Course code	24_APS2IC
Level	Master
Term	SS25
Lecturer	Harald Hinterleitner
Contact hours per week	2
ECTS credits	2,5
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
Probability theory:
• Probability
• Permutations and Combinations
• Random Variables
• Probability Distributions
• Mean Value
• Variance
• Binomial Distribution
• Hypergeometric Distribution
• Poisson Process (Poisson Distribution, Exponential Distribution)
• Normal Distribution
• Weibull Distribution
• Reliability
Statistics:
• Graphical Representation of Data
• Mean/Variance of Data, Estimation of Parameters (Method of Moments, Maximum Likelihood Method)
• Confidence Intervals
• Tests for the Parameter of the Normal Distribution
• Quality Control
• Chi Square Goodness of Fit Test

• Test for the Parameter of the Binomial Distribution
• Nonparametric Tests
• Regression Analysis

Prerequisites:
Mathematics for Engineers

Lecture/Seminar profile:

Energy Markets and Policy (24_EMP2IC)

Degree course	SES.ma
Course title	Energy Markets and Policy
Course code	24_EMP2IC
Level	Master
Term	SS25
Lecturer	Wilhelm Süßenbacher, Jürgen Dumpelnik
Contact hours per week	2
ECTS credits	2,5
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Energy pricing with respect to examples like
• Classical energy utilisation
• Domestic systems
• Island systems
• Microgrid systems
Energy trading (Market places, products, hedging, …) Financial assessment
Overview on marketing and market development

Prerequisites:
none

Lecture/Seminar profile:

Energy Project Development (24_EPD2IC)

Degree course	SES.ma
Course title	Energy Project Development
Course code	24_EPD2IC
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Meaning and how to approach for the project states
Feasibility study
Due diligence
Energy Yield Assessment
Permitting

Prerequisites:
none

Lecture/Seminar profile:

Hydro Power (24_HYD2IC)

Degree course	SES.ma
Course title	Hydro Power
Course code	24_HYD2IC
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
- History
o Use
o Worldwide
o Europe
- Hydropower plants
o Classification
o Plant types
- Turbines
o Classification
o Types
- General principles
o Energetic
o Hydrological
o Legal
o Economy
- Hydropower utilization and ecology
- Advantages and disadvantages of hydropower
- Possible solutions
- Small hydropower plants
- Electricity from sewers

Prerequisites:
Electrical Energy Engineering

Lecture/Seminar profile:

International Project Management (24_IPM2IC)

Degree course	SES.ma
Course title	International Project Management
Course code	24_IPM2IC
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
The students are learning the specific characteristics of international project management and the different cultural ways of management

Intercultural decision-making and responsibility for a successful management in intercultural business situations
Getting knowledge about the own and foreign cultures Overview of different cultural ways of management Leadership in an international context
Specific characteristic in international and intercultural project management
Enhancements of intercultural key competencies

Prerequisites:
none

Lecture/Seminar profile:

Scientific Programming (24_SCP2IC)

Degree course	SES.ma
Course title	Scientific Programming
Course code	24_SCP2IC
Level	Master
Term	SS25
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
General programming skills:
Developing of programmes
Approach for software projects
Programme structures
Subroutines
Data types and definitions
Loops
Case
Objects
Machine User Interfaces
Graphic User Interface
Access to Worksheets and workbooks
Dialogs
File access
Text and binary files
Programming techniques
Documentation

Prerequisites:
none

Lecture/Seminar profile:

Selected Sections of Materials Engineering (AKW4SE_20)

Degree course	WFT.ma
Course title	Selected Sections of Materials Engineering
Course code	AKW4SE
Level	Master
Term	SS25
Lecturer	Ludovic Samek
Contact hours per week	1
ECTS credits	1
Course type	Seminar
Examinations	written examination
Language of instruction	German/English
Places for international students	1

Learning objectives:
n.a.

Content:
Knowledge expansion and broadening in the areas of: structure, manufacturing /processing and application of special materials (metals, plastics, ceramics), new methods of material characterization and their applications

Prerequisites:
Bachelor's degree in a technical field of study

Lecture/Seminar profile:

Master Thesis (MAA4PT_20)

Degree course	WFT.ma
Course title	Master Thesis
Course code	MAA4PT
Level	Master
Term	SS25
Lecturer	GmBH BIS Meldung Korrektur (Nicht Exportiert)
Contact hours per week	0
ECTS credits	22
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	1

Learning objectives:
n.a.

Content:
Specific theme or problem in the area of material science or manufacturing technology; literature research; methodical and scientific approach; planning and performing technical or scientific tests; analyzing and interpretation of test results; documentation and interpretation, design, formulation and compilation of scientific work

Prerequisites:
Bachelor's degree in a technical field of study

Lecture/Seminar profile:

Project Work 2 (PRJ2PT_20)

Degree course	WFT.ma
Course title	Project Work 2
Course code	PRJ2PT
Level	Master
Term	SS25
Lecturer	
Contact hours per week	0,4
ECTS credits	13
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
Specific R&D-project in the area of material science or manufacturing technology; applied project management; literature research; detailed and interdisciplinary exercise of specific knowledge; methodical and scientific approach; planning and performing technical or scientific tests; analyzing and interpretation of test results; design and compilation of technical and scientific reports

Prerequisites:
Bachelor's degree in a technical field of study

Lecture/Seminar profile:

Plant Construction Contracts (24_PCC2IL)

Degree course	AB.ma
Course title	Plant Construction Contracts
Course code	24_PCC2IL_Gr.B
Level	Master
Term	SS25
Lecturer	Albert Angerbauer
Contact hours per week	2
ECTS credits	4
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
•The course is based on a specific given contract for the supply of a major industrial plant (arr. 250 pages).
•Types of contract (supply, service agreement, "turn key") operator models
•The major components of plant contract
•The performance directory and its forms
•Specification, documentation and their legal significance
•Liability and guarantees
•Forms of cooperation in plant
•Patents, licenses, safeguard clauses
•A semester work in a group of three students (arr. 10 to 20 pages) and an exam on a given case has to be done.

Prerequisite:
- International contract law (ABma, 1. term):
- Basics of international legal terms for contracts
- Some general legal experience (e.g. in an economic background) should also be reasonable

Prerequisites:
n.a.