



UNIVERSITY
OF APPLIED SCIENCES
UPPER AUSTRIA

Course Offer

for Incoming Exchange
Students



Summer Semester 2027

School of Engineering

fh-ooe.at/en/wels-campus

GENERAL INFORMATION

Choosing Courses

Exchange students may combine courses from different degree programs (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. We strongly suggest selecting courses from one to two-degree programs and from the same semester to avoid overlaps. 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 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				Green Science & Food Technology - BASIC				Engineering Management / Product Development / Innovation - BASIC			
Programme	Code	Course Name	ECTS	Programme	Code	Course Name	ECTS	Programme	Code	Course Name	ECTS
EE.ba	EEN2LE	Electronic Circuit Design	3	GS.ba	APF2IL_ENG	Agricultural Technology II: Introduction to Plant Production	2	IPEM.ba	DMA2IL	Digital Marketing	1
EE.ba	PHY2LE	Physics for Engineering	4	GS.ba	BON2VO_ENG	Soil and nutrient cycles	1	IPEM.ba	ELE2IL	Electrical Engineering I	2,5
EE.ba	SSK2SE	Presentation Techniques	1,5	GS.ba	GLT2IL_ENG	Agricultural Technology II: Fundamentals of Agricultural Engineering	2	IPEM.ba	INO2VO	Innovation & Creativity	1
ES.ba	BPR6PT	Project	16	GS.ba	ÖKO2VO_ENG	Ecology	1	IPEM.ba	MAT2VO	Mathematics II	3
				LTE.ba	CHE2VO_ENG	Chemistry II	3	IPEM.ba	MEL2VO	Machine Elements	3
				LTE.ba	STÖ2UE_ENG	Stoichiometry II	1	IPEM.ba	MRE2IL	Market Research I	3
				LTE.ba	RSK2VO_ENG	Raw Material Sciences	2	IPEM.ba	TEC2IL	Technical Drawing II	2
				LTE.ba	MAT2IL_ENG	Mathematics II	3	IPEM.ba	ENG2UE	English II	2
				LTE.ba	BWL2IL_ENG	Business Administration II	3	IPEM.ba	BUS4IL	Business Administration II	4
				LTE.ba	AYC2VO_ENG	Analytical Chemistry II	1				
Total			24,5	Total			19	Total			21,5
Automation/Electrical/Mechanical Engineering - ADVANCED				Environmental & Sustainable Energy Engineering - ADVANCED				Engineering Management / Product Development / Innovation - ADVANCED			
Programme	Code	Course	ECTS	Programme	Code	Course Name	ECTS	Programme	Code	Course Name	ECTS
MB.ma	MOM2IL	Mechanics of Materials	6	SES.ma	EMP2IC	Energy Markets and Policy	2,5	IPM.ma	CHM2SE	Change Management	2
MB.ma	DYN2IL	Dynamics	6	SES.ma	EPD2IC	Energy Project Development	2,5	IPM.ma	CTR2IL	Controlling	2
MB.ma	PRO4PT	R&D Project	10	SES.ma	ETD2LE	Modern Energy Transport and Distribution	3	IPM.ma	DAA2IL	Data Analysis	3
BI.ma	KFK2UE	Negotiation & Moderation	2	SES.ma	ETD2PR	Modern Energy Transport and Distribution	1,2	IPM.ma	LCM2IL	Product Lifecycle Management	2
				SES.ma	HYD2IC	Hydro Power	2,5	IPM.ma	MPM2IL	Multi Project Management	2
				SES.ma	HYT2LE	Hydrogen Technology	3	IPM.ma	PER2IL	New Product Development	3
				SES.ma	IPM2IC	International Project Management	2,5	IPM.ma	REE2IL	Requirements Engineering	2
				SES.ma	LSS2IC	Large-Scale Solar Power Plants	3	IPM.ma	SUS2IL	Sustainability	1
				SES.ma	SCP2IC	Scientific Programming	2,5	IPM.ma	VAR2IL	Virtual and Augmented Reality	2
								IPM.ma	ZET2SE	Design Visualization and Presentation II	1
Total			24	Total			22,7	Total			20

Course Packages

The above course packages are an option that has been created for the relevant study fields since 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
Agricultural Technology and Management (Bachelor, Wels Campus)							
AGR.ba	23_PPH2IL_ENG	Plant physiology	Integrated course	2	Bachelor	3	9
Architecture (Bachelor, Wels Campus)							
ARCH.ba	BSC4VO	Building Science II	Lecture	4	Bachelor	2,5	10
ARCH.ba	COB4PT	Complex Buildings	Project	4	Bachelor	8	11
ARCH.ba	ITD4VO	Interior Design II	Lecture	4	Bachelor	1,5	12
ARCH.ba	SKK4UE	Conflict Management and Mediation	Practice-oriented session	4	Bachelor	1	13
Civil Engineering (Bachelor, Wels Campus)							
BI.ba	25_PRO4PT	Project I	Project	4	Bachelor	3	14
BI.ba	25_SKK4UE	Conflict Management & Mediation	Practice-oriented session	4	Bachelor	1	15
Electrical Engineering (Bachelor, Wels Campus)							
EE.ba	21_EEN2LE	Electronic Circuit Design	Lecture	2	Bachelor	3	16
EE.ba	21_MAT2LE	Mathematics 2	Lecture	2	Bachelor	5	18
EE.ba	21_PHY2LE	Physics for Engineering	Lecture	2	Bachelor	4	19
EE.ba	21_SDE6LE	Statutory Directives for Electrical Engineering	Lecture	6	Bachelor	3	21
EE.ba	21_SSK2SE	Presentation Techniques	Seminar	2	Bachelor	1,5	22
EE.ba	21_SSK4SE	Intercultural Competence for the Workplace	Seminar	4	Bachelor	1,5	23
Engineering Science (Bachelor, Wels Campus)							
ES.ba	23_BPR6PT	Project	Internship	6	Bachelor	16	24
School of Engineering (Bachelor, Wels Campus)							
FWE	DAF_A1.1_UE	German Language A 1.1	Practice-oriented session	2	Bachelor	2	25

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
School of Engineering (Bachelor, Wels Campus)							
FWE	DAF_A1.2_UE	German Language A 1.2	Practice-oriented session	2	Bachelor	2	26
FWE	DAF_A2.2_UE	German Language A 2.2	Practice-oriented session	2	Bachelor	2	28
FWE	DAF_B1.2_UE	German Language B 1.2	Practice-oriented session	2	Bachelor	2	30
FWE	DAF_B2.2_UE	German Language B 2.2	Practice-oriented session	2	Bachelor	2	32
FWE	DAF_C1.2_UE	German Language C 1.2	Practice-oriented session	2	Bachelor	2	33
Green Science (Bachelor, Wels Campus)							
GS.ba	23_APF2IL_ENG	Agricultural Technology II: Introduction to Plant Production	Integrated course	2	Bachelor	2	34
GS.ba	23_BON2VO_ENG	Soil and nutrient cycles	Lecture	2	Bachelor	1	35
GS.ba	23_GLT2IL_ENG	Agricultural Technology II: Fundamentals of Agricultural Engineering	Integrated course	2	Bachelor	2	36
GS.ba	23_ÖKO2VO_ENG	Ecology	Lecture	2	Bachelor	1	37
Innovation, Product & Engineering Management (Bachelor, Wels Campus)							
IPEM.ba	25_BIN4IL	Business Intelligence	Integrated course	4	Bachelor	3	38
IPEM.ba	25_BUS4IL	Business Administration II	Integrated course	4	Bachelor	4	39
IPEM.ba	25_DES2IL	Design II	Integrated course	2	Bachelor	1	40
IPEM.ba	25_DMA2IL	Digital Marketing	Integrated course	2	Bachelor	1	41
IPEM.ba	25_ELE2IL	Electrical Engineering I	Integrated course	2	Bachelor	2,5	42
IPEM.ba	25_ENG2UE	English II	Practice-oriented session	2	Bachelor	2	43
IPEM.ba	25_ENG4UE	English IV	Practice-oriented session	4	Bachelor	2	45
IPEM.ba	25_INO2VO	Innovation & Creativity	Lecture	2	Bachelor	1	47
IPEM.ba	25_MAK4IL	Marketing Tools	Integrated course	4	Bachelor	3	48

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Innovation, Product & Engineering Management (Bachelor, Wels Campus)							
IPEM.ba	25_MAT2VO	Mathematics II	Lecture	2	Bachelor	3	49
IPEM.ba	25_MEL2VO	Machine Elements	Lecture	2	Bachelor	3	50
IPEM.ba	25_MRE2IL	Market Research I	Integrated course	2	Bachelor	3	51
IPEM.ba	25_PRM4IL	Project Management	Integrated course	4	Bachelor	3	52
IPEM.ba	25_PRO4IL	Programming	Integrated course	4	Bachelor	3	53
IPEM.ba	25_QMT4IL	Quality Management	Integrated course	4	Bachelor	3	54
IPEM.ba	25_TEC2IL	Technical Drawing II	Integrated course	2	Bachelor	2	55
Food Technology and Nutrition (Bachelor, Wels Campus)							
LTE.ba	23_AYC2VO_ENG	Analytical Chemistry II	Lecture	2	Bachelor	1	56
LTE.ba	23_BWL2IL_ENG	Business Administration II	Integrated course	2	Bachelor	3	57
LTE.ba	23_FER4IL_INC	Brewing Science	Integrated course	4	Bachelor	1	58
LTE.ba	23_MAT2IL_ENG	Mathematics II	Integrated course	2	Bachelor	3	59
LTE.ba	23_RSK2VO_ENG	Raw Material Sciences	Lecture	2	Bachelor	2	60
LTE.ba	23_STÖ2UE_ENG	Stoichiometry II	Practice-oriented session	2	Bachelor	1	61
LTE.ba	24_CHE2VO_ENG	Chemistry II	Lecture	2	Bachelor	3	62
Materials and Process Engineering (Bachelor, Wels Campus)							
WFT.ba	23_BAA6PT	Internship/Project	Project	6	Bachelor	8	63
WFT.ba	23_ENG2UE	English II	Practice-oriented session	2	Bachelor	1	64
WFT.ba	23_PRO2PT	Project II	Project	2	Bachelor	4	65
WFT.ba	23_PRO4PT	Project IV	Project	4	Bachelor	4	66

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Materials and Process Engineering (Bachelor, Wels Campus)							
WFT.ba	23_PRO6PT	Project VI	Project	6	Bachelor	4	67
Materials & Lightweight Engineering (Bachelor, Wels Campus)							
WL.ba	23_IPA4PT	Interdisciplinary Project 1	Project	4	Bachelor	4	68

Master's Degree Programme

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Plant Construction Management (Master, Wels Campus)							
AB.ma	25_AEN2IL_E	Anlagenengineering II	Integrated course	2	Master	3	69
AB.ma	25_APL2IL_E	Project scheduling & Schedule control (MS Project)	Integrated course	2	Master	1,5	70
AB.ma	25_CAP2UE_E	Software supported plant engineering	Practice-oriented session	2	Master	5	71
AB.ma	25_ETA2IL_E	Electrical Engineering in Plant Construction	Integrated course	2	Master	3	72
AB.ma	25_IAPT2PT_E	Interdisciplinary project planning	Project	2	Master	3,5	73
AB.ma	25_PCC2SE_E	Plant construction contracts	Seminar	2	Master	4	74
AB.ma	25_PRC2IL_E	Project controlling	Integrated course	2	Master	2,5	75
AB.ma	25_SAN2IL_E	Damage analysis	Integrated course	2	Master	1,5	76
Civil Engineering (Master, Wels Campus)							
Bl.ma	COF2SE	Construction & Form	Seminar	2	Master	2	77
Bl.ma	KFK2UE	Negotiation & moderation	Practice-oriented session	2	Master	2	78
Bl.ma	KFK4UE	Leadership	Practice-oriented session	4	Master	1	79
Digital Engineering & Industrial AI (Master, Wels Campus)							
DEIA.Ma/ AMM.Ma	20_ACC2IL	Management Accounting	Integrated course	2	Master	2	80
DEIA.Ma/ AMM.Ma	20_ACW2IL	Academic working	Integrated course	2	Master	1	82
DEIA.Ma/ AMM.Ma	20_AIT2IL	Automotive IT Systems 2	Integrated course	2	Master	3	83
DEIA.Ma/ AMM.Ma	20_DSE2IL	Drive Systems and E-Mobility I	Integrated course	2	Master	3	84
DEIA.Ma/ AMM.Ma	20_DTC2IL	Drive Train Control Systems	Integrated course	2	Master	4	86
DEIA.Ma/ AMM.Ma	20_FUS2IL	Functional Safety	Integrated course	2	Master	1	87

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Digital Engineering & Industrial AI (Master, Wels Campus)							
DEIA.Ma/ AMM.Ma	20_MOM2IL	Market Oriented Management	Integrated course	2	Master	2	88
DEIA.Ma/ AMM.Ma	20_QMA2IL	Automotive Quality Management 2	Integrated course	2	Master	2	90
Electrical Engineering (Master, Wels Campus)							
EE.ma	21_SSK4PR	Intercultural Leadership and Management	Practice-oriented session	4	Master	2	92
Innovation and Product Management (Master, Wels Campus)							
IPM.ma	25_CAID2UE	Computer Aided Design I	Practice-oriented session	2	Master	2	93
IPM.ma	25_CHM2SE	Change Management	Seminar	2	Master	2	94
IPM.ma	25_CTR2IL	Controlling	Integrated course	2	Master	2	95
IPM.ma	25_DAA2IL	Data Analysis	Integrated course	2	Master	3	96
IPM.ma	25_DET2IL	Design Theory	Integrated course	2	Master	1	97
IPM.ma	25_EHW2SE	Design Prototyping	Seminar	2	Master	3	98
IPM.ma	25_LCM2IL	Product Lifecycle Management	Integrated course	2	Master	2	99
IPM.ma	25_MBE2IL	Model Based Engineering	Integrated course	2	Master	3	100
IPM.ma	25_MPM2IL	Multi Project Management	Integrated course	2	Master	2	101
IPM.ma	25_NBD2IL	New Business Development	Integrated course	2	Master	3	102
IPM.ma	25_PEP2IL	New Product Development	Integrated course	2	Master	3	103
IPM.ma	25_REE2IL	Requirements Engineering	Integrated course	2	Master	2	104
IPM.ma	25_SUS2IL	Sustainability	Integrated course	2	Master	1	105
IPM.ma	25_VAR2IL	Virtual and Augmented Reality	Integrated course	2	Master	2	106
IPM.ma	25_ZET2SE	Design Visualization and Presentation II	Seminar	2	Master	1	107

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Lightweight Design and Composite Materials (Master, Wels Campus)							
LCW.ma	21_ADA4PT	Master Thesis	Project	4	Master	22	108
LCW.ma	21_APR2PT	Project Work II	Project	2	Master	12	109
Mechanical Engineering (Master, Wels Campus)							
MB.ma	22_DYN2IL_Inc	Dynamics	Integrated course	2	Master	6	110
MB.ma	22_MOM2IL_Inc	Mechanics of Materials	Integrated course	2	Master	6	111
MB.ma	22_PRO4PT_for Incomings	R&D Project	Project	4	Master	10	112
Sustainable Energy Systems (Master, Wels Campus)							
SES.ma	24_BAT2LE	Battery Technology	Lecture	2	Master	3	115
SES.ma	24_EMP2IC	Energy Markets and Policy	Integrated course	2	Master	2,5	116
SES.ma	24_EPD2IC	Energy Project Development	Integrated course	2	Master	2,5	117
SES.ma	24_ETD2LE	Modern Energy Transport and Distribution	Lecture	2	Master	3	118
SES.ma	24_ETD2PR	Modern Energy Transport and Distribution	Practice-oriented session	2	Master	1,2	119
SES.ma	24_HYD2IC	Hydro Power	Integrated course	2	Master	2,5	120
SES.ma	24_HYT2LE	Hydrogen Technology	Lecture	2	Master	3	122
SES.ma	24_IPM2IC	International Project Management	Integrated course	2	Master	2,5	123
SES.ma	24_LSS2IC	Large-Scale Solar Power Plants	Integrated course	2	Master	3	124
SES.ma	24_SCP2IC	Scientific Programming	Integrated course	2	Master	2,5	125

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Materials and Process Engineering (Master, Wels Campus)							
WFT.ma	AKW4SE_20	Selected Sections of Materials Engineering	Seminar	4	Master	1	126
WFT.ma	MAA4PT_20	Master Thesis	Project	4	Master	22	127
WFT.ma	PRJ2PT_20	Project Work 2	Project	2	Master	13	128
Plant Construction Management (Master - Part Time, Wels Campus)							
AB.ma	25_AEN2IL	Anlagenengineering II	Integrated course	2	Master	3	129
AB.ma	25_ENG2UE	English II	Practice- oriented session	2	Master	2	130
AB.ma	25_IAPT2PT	Interdisciplinary project planning	Project	2	Master	3,5	131
AB.ma	25_PCC2SE	Plant construction contracts	Seminar	2	Master	4	132
AB.ma	25_PRC2IL	Project controlling	Integrated course	2	Master	2,5	133

Lecture/Seminar profile:**Plant physiology (23_PPH2IL_ENG)**

Degree course	AGR.ba
Course title	Plant physiology
Course code	23_PPH2IL_ENG
Level	Bachelor
Term	SS27
Lecturer	Manuela Meindl-Milla
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:

Mineral nutrition: availability and uptake of minerals, essential nutrients, nitrogen cycle; nitrogen assimilation, biological nitrogen fixation, mycorrhiza;

Water balance and transport processes in plants: transport at the cellular level across membranes, short-distance transport at the tissue and organ levels, long-distance transport throughout the entire plant via the xylem and phloem;

Plant hormones: regulation of growth, differentiation, and development; commercial applications

Prerequisites:

n.a.

Lecture/Seminar profile:**Building Science II (BSC4VO)**

Degree course	ARCH.ba
Course title	Building Science II
Course code	BSC4VO
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	1

Learning objectives:

n.a.

Content:

The lecture “Building Science II” is part of the overall module “Complex Buildings” and deepens students’ understanding of the scientific and technical aspects of building science. Building on foundational knowledge from previous semesters, the lecture focuses on advanced concepts crucial for designing complex buildings.

Key Focus Areas of the Lecture:

Materials Science in Construction: In-depth understanding of building materials, their properties, and their application in various construction projects.

Energy Efficiency and Sustainability: Advanced concepts for integrating energy-efficient technologies and sustainable practices into building design.

Building Services Engineering: Deepening knowledge of the integration of heating, ventilation, and air conditioning systems, as well as electrical systems in complex structures.

Building Physics: In-depth analysis of topics such as heat, moisture, and sound control to ensure optimal comfort and functionality in buildings.

Construction Technology: Advanced concepts in construction technology, particularly concerning complex building structures.

Prerequisites:

n.a.

Lecture/Seminar profile:**Complex Buildings (COB4PT)**

Degree course	ARCH.ba
Course title	Complex Buildings
Course code	COB4PT
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	4
ECTS credits	8
Course type	Project
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:

n.a.

Content:

Modul Entwerfen II_T1: Complex Building (PT): Case Studies: Analyze and evaluate case studies of renowned complex buildings to extract valuable insights and lessons. Design Studios: Engage in design studios focusing on real-world projects, allowing hands-on application of learned concepts. Advanced Technologies: Explore the integration of advanced technologies, such as Building Information Modeling (BIM), parametric design, and simulation tools. Sustainable Design Principles: Incorporate sustainable design principles, understanding the environmental impact of complex buildings and exploring eco-friendly design solutions.

Prerequisites:

n.a.

Lecture/Seminar profile:**Interior Design II (ITD4VO)**

Degree course	ARCH.ba
Course title	Interior Design II
Course code	ITD4VO
Level	Bachelor
Term	SS27
Lecturer	
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:

Building on foundational knowledge from previous semesters, this lecture emphasizes the integration of interior spaces with architectural concepts, technologies, and sustainability principles.

Key Learning Objectives:

Advanced Interior Design Concepts: Explore sophisticated interior design concepts and principles applicable to complex buildings, including spatial organization, lighting, materials, and color theory.

Integration with Architectural Design: Understand how interior design integrates with architectural concepts, ensuring a harmonious and cohesive overall building design.

Technological Integration: Explore advanced technologies and systems relevant to interior spaces, including smart building technologies, lighting control systems, and sustainable interior solutions.

Prerequisites:

n.a.

Lecture/Seminar profile:**Conflict Management and Mediation (SKK4UE)**

Degree course	ARCH.ba
Course title	Conflict Management and Mediation
Course code	SKK4UE
Level	Bachelor
Term	SS27
Lecturer	Nora Schauer
Contact hours per week	1
ECTS credits	1
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:

n.a.

Content:

Key Learning Objectives: Conflict Identification and Analysis:

The course covers the fundamentals and principles of conflict management, including the stages of conflict escalation and possible interventions. Students will analyze and reflect on specific conflict situations and develop a personal action plan. The course also focuses on mediative interventions, such as understanding attitudes, needs, and interests. Throughout, there is a strong emphasis on analyzing and reflecting on concrete conflict scenarios.

Communication Skills: Enhance verbal and written communication skills to effectively express ideas, negotiate differences, and collaborate with diverse stakeholders.

Negotiation Techniques: Learn negotiation strategies and techniques applicable to the architectural and design context, emphasizing win-win solutions.

Mediation Processes: Understand the principles and processes of mediation, with a focus resolving disputes and fostering positive working relationships.

Team Collaboration: Cultivate teamwork and collaboration skills essential for successful project management, emphasizing the importance of collective problem-solving

Prerequisites:

n.a.

Lecture/Seminar profile:**Project I (25_PRO4PT)**

Degree course	Bl.ba
Course title	Project I
Course code	25_PRO4PT
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Project
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

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:**Conflict Management & Mediation (25_SKK4UE)**

Degree course	Bl.ba
Course title	Conflict Management & Mediation
Course code	25_SKK4UE
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	1
ECTS credits	1
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:

n.a.

Content:

Principles of conflict management;
Escalation levels of conflicts and intervention possibilities;
Analysis and reflection of examples of conflict situations;
How to lead a constructive conflict conversation;
Measures and strategies in conflict prevention at the individual level, team level and organizational level;
Mediative techniques (e.g. attitudes, needs, interests,..)

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	SS27
Lecturer	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
 - Protection methods
 - Free wheel diode

- Analog amplifier
- Operational amplifier
- Constant current circuit

Digital circuits

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	SS27
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:**Physics for Engineering (21_PHY2LE)**

Degree course	EE.ba
Course title	Physics for Engineering
Course code	21_PHY2LE
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	2
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	4

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 prerequisites 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	SS27
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 prerequisites required

Lecture/Seminar profile:**Presentation Techniques (21_SSK2SE)**

Degree course	EE.ba
Course title	Presentation Techniques
Course code	21_SSK2SE
Level	Bachelor
Term	SS27
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	SS27
Lecturer	
Contact hours per week	2
ECTS credits	1,5
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

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 know 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:**Work Experience/Internship (23_BPR6PT)**

Degree course	ES.ba
Course title	Project
Course code	23_BPR6PT
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	0,5
ECTS credits	16
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:**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	SS27
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	2
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	SS27
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	2
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	SS27
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	2
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 prepositions, 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 prepositions.

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	SS27
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	2
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, conjunction: 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	SS27
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	2
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	SS27
Lecturer	Lehrpersonal Berlitz
Contact hours per week	2
ECTS credits	2
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:**Agricultural Technology II: Introduction to Plant Production
(23_APF2IL_ENG)**

Degree course	GS.ba
Course title	Agricultural Technology II: Introduction to Plant Production
Course code	23_APF2IL_ENG
Level	Bachelor
Term	SS27
Lecturer	
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:

- Field as ecosystem;
- Seeds, germination and germination testing;
- Fertilizer and crop rotation determinations;
- Principles of conventional, integrated and organic farming.

Prerequisites:

n.a.

Lecture/Seminar profile:**Soil and nutrient cycles (23_BON2VO_ENG)**

Degree course	GS.ba
Course title	Soil and nutrient cycles
Course code	23_BON2VO_ENG
Level	Bachelor
Term	SS27
Lecturer	Claudia Probst
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:

- Soils as the basis of life;
- Soils as a component of the natural balance (water and nutrient cycles);
- Soils as a filter, buffer and degradation medium for pollutants;
- Cycles of the most important elements of the ecosystem: carbon, nitrogen, oxygen, iron and phosphorus.

Prerequisites:

n.a.

Lecture/Seminar profile:**Agricultural Technology II: Fundamentals of Agricultural Engineering
(23_GLT2IL_ENG)**

Degree course	GS.ba
Course title	Agricultural Technology II: Fundamentals of Agricultural Engineering
Course code	23_GLT2IL_ENG
Level	Bachelor
Term	SS27
Lecturer	Viktoria Kruder-Motsch
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:

- Introduction to systems engineering, sizes, units, standards;
- Machine elements and materials science;
- Coupling and transmission;
- Engine technology;
- Electrical machinery;
- Overview of agricultural machinery.

Prerequisites:

n.a.

Lecture/Seminar profile:**Ecology (23_ÖKO2VO_ENG)**

Degree course	GS.ba
Course title	Ecology
Course code	23_ÖKO2VO_ENG
Level	Bachelor
Term	SS27
Lecturer	Manuela Meindl-Milla
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:

- What is ecology - basics and definitions;
- Why ecology? Examples of applications of ecological knowledge or problems resulting from lack of understanding of ecological relationships;
- Evolutionary ecology: the diversity of life - biodiversity and basics of ecological genetics, genetic differentiation by selection, drift, speciation and species loss;
- Natural selection, ecology and behavior, evolutionary arms race, life in groups.

Prerequisites:

n.a.

Lecture/Seminar profile:**Business Intelligence (25_BIN4IL)**

Degree course	IPEM.ba
Course title	Business Intelligence
Course code	25_BIN4IL
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:

n.a.

Content:

Basis Data Warehouse
Basis Business Intelligence
Basis ETL (extract, transform, load data)
OLAP-Basis, Reporting-Tools
Basis Big Data
Basis Data visualisation

Prerequisites:

n.a.

Lecture/Seminar profile:**Business Administration II (25_BUS4IL)**

Degree course	IPEM.ba
Course title	Business Administration II
Course code	25_BUS4IL
Level	Bachelor
Term	SS27
Lecturer	Judith Frei
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:

Introduction in the Business Studies
Core processes of a company
Forms of business; company formation
Introduction to the balance sheet and the profit and loss account
Fundamentals of cost accounting

Prerequisites:

n.a.

Lecture/Seminar profile:**Design II (25_DES2IL)**

Degree course	IPEM.ba
Course title	Design II
Course code	25_DES2IL
Level	Bachelor
Term	SS27
Lecturer	
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:

Design and Brand
Design History
Design and sustainable development

Prerequisites:

n.a.

Lecture/Seminar profile:**Digital Marketing (25_DMA2IL)**

Degree course	IPEM.ba
Course title	Digital Marketing
Course code	25_DMA2IL
Level	Bachelor
Term	SS27
Lecturer	
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 marketing: Online Marketing, Social Media Marketing, Blogs, ...
Marketing Automation and Artificial Intelligence in Digital Marketing

Prerequisites:

n.a.

Lecture/Seminar profile:**Electrical Engineering I (25_ETE2IL)**

Degree course	IPEM.ba
Course title	Electrical Engineering I
Course code	25_ELE2IL
Level	Bachelor
Term	SS27
Lecturer	Raimund Edlinger
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, withstands networks, Kirchhoff's laws, network calculation, substitute voltage/replacement current source, temporal quantities, types of temporal currents and voltages, presentation of temporal quantities. Characteristics of temporal phenomena, passive components, general relationships of current, voltage, energy, power on passive components with arbitrary temporal 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:**English II (25_ENG2UE)**

Degree course	IPEM.ba
Course title	English II
Course code	25_ENG2UE
Level	Bachelor
Term	SS27
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:

Business Travel language practice: e.g. 'social English', business introductions, small talk, hotels, telephoning etc.

Of the describing the economy, jobs, work routines, companies

Technical and Business English: selected units from Technical English: Vocabulary and Grammar

Explanation verbally and/or in writing by students of topics from other subjects of the Semester 1 curriculum not being taught in English

Explanation and discussion of Business Vocabulary/Topics:

-Industry s and types of company

-Accounts and Payments

-Advertising and Media

-Banking and Finance

-Buying and Selling

Reading and discussion of articles on topics relevant/related to the other subjects of the curriculum and field of study

Audio-visual work (listening practice): watching relevant (=science/technology) documentary films + discussion thereof and vocabulary-building work

General:

Intercultural Communication and Awareness: countries, peoples and their customs/cultural awareness

Reading, discussion of and vocabulary work on articles of general topical interest and/or based on a theme

Grammar revision as required (e.g. Present and Past (biographies of famous people/engineers, industrial revolution...), prepositions time and place, word or the)

Prerequisites:

n.a.

Lecture/Seminar profile:**English IV (25_ENG4UE)**

Degree course	IPEM.ba
Course title	English IV
Course code	25_ENG4UE
Level	Bachelor
Term	SS27
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:

Business Travel language practice: e.g. 'social English', business introductions, small talk, hotels, telephoning etc.

Of the describing the economy, jobs, work routines, companies

Technical and Business English: selected units from Technical English: Vocabulary and Grammar

Explanation verbally and/or in writing by students of topics from other subjects of the Semester 1 curriculum not being taught in English

Explanation and discussion of Business Vocabulary/Topics:

-Industry s and types of company

-Accounts and Payments

-Advertising and Media

-Banking and Finance

-Buying and Selling

Reading and discussion of articles on topics relevant/related to the other subjects of the curriculum and field of study

Audio-visual work (listening practice): watching relevant (=science/technology) documentary films + discussion thereof and vocabulary-building work

General:

Intercultural Communication and Awareness: countries, peoples and their customs/cultural awareness

Reading, discussion of and vocabulary work on articles of general topical interest and/or based on a theme

Grammar revision as required (e.g. Present and Past (biographies of famous people/engineers, industrial revolution...), prepositions time and place, word or the)

Prerequisites:

n.a.

Lecture/Seminar profile:**Innovation & Creativity (25_INO2VO)**

Degree course	IPEM.ba
Course title	Innovation & Creativity
Course code	25_INO2VO
Level	Bachelor
Term	SS27
Lecturer	
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:**Marketing Tools (25_MAK4IL)**

Degree course	IPEM.ba
Course title	Marketing Tools
Course code	25_MAK4IL
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:

n.a.

Content:

Pricing policy
Pricing procedure
Price decision
Price modification
Conditions policy
Distribution
Sales channels
Logistics
Communication policy
Communication instruments in Industrial Goods Branding
Message design
Media selection
Use of the marketing instrument during the product life cycle

Prerequisites:

n.a.

Lecture/Seminar profile:**Mathematics II (25_MAT2VO)**

Degree course	IPEM.ba
Course title	Mathematics II
Course code	25_MAT2VO
Level	Bachelor
Term	SS27
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 (25_MEL2VO)**

Degree course	IPEM.ba
Course title	Machine Elements
Course code	25_MEL2VO
Level	Bachelor
Term	SS27
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 hypotheses

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 (25_MRE2IL)**

Degree course	IPEM.ba
Course title	Market Research I
Course code	25_MRE2IL
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	1
ECTS credits	3
Course type	Integrated course
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

Information collection and processing

Selected methods of secondary research (market monitoring, competitor analyses, press/patent/trademark searches, ...)

Basic 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:**Project Management (25_PRM4IL)**

Degree course	IPEM.ba
Course title	Project Management
Course code	25_PRM4IL
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:

n.a.

Content:

Project Management as a Business Process
Project Manual
Methods to manage projects
Methods to start projects
Project delimitation 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 (25_PRO4IL)**

Degree course	IPEM.ba
Course title	Programming
Course code	25_PRO4IL
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	3
ECTS credits	3
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 for character manipulation and file manipulation

Prerequisites:

n.a.

Lecture/Seminar profile:**Quality Management (25_QMT4IL)**

Degree course	IPEM.ba
Course title	Quality Management
Course code	25_QMT4IL
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	3
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:

n.a.

Content:

Module content and importance of quality management
Quality management
Overview and operational implementation of EN ISO 9001
Overview of the IATF16949
Process, process orientation and process description
Continuous improvement
Overview of individual quality tools

Prerequisites:

n.a.

Lecture/Seminar profile:**Technical Drawing II (25_TEC2IL)**

Degree course	IPEM.ba
Course title	Technical Drawing II
Course code	25_TEC2IL
Level	Bachelor
Term	SS27
Lecturer	
Contact hours per week	1
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:

n.a.

Content:

Design task with project character
Representation of assembly groups, parts lists
Representation of bearings, gears, seals
Sheet metal constructions

Working with modules
 Inport of external components/modules
Variant Design
Sheet metal part modeling
Photorealistic presentation

Interfaces between CAD and simulation programs
Structural analysis
Kinematic Simulation

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	SS27
Lecturer	Christian Forsich
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 II (23_BWL2IL_ENG)**

Degree course	LTE.ba
Course title	Business Administration II
Course code	23_BWL2IL_ENG
Level	Bachelor
Term	SS27
Lecturer	Judith Frei
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:**Brewing Science (23_FER4IL_INC)**

Degree course	LTE.ba
Course title	Brewing Science
Course code	23_FER4IL_INC
Level	Bachelor
Term	SS27
Lecturer	Katrin Mathmann
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	10

Learning objectives:

n.a.

Content:

- Basics of beer production.
- Team-wise production of beer on a pilot plant scale (20 liters) starting with the selection and preparation of raw materials; implementation of the brewing, fermentation and storage process
- Filling into bottles/barrels. Drawing up a production protocol including the essential control parameters to describe proper beer production.
- Sensory evaluation of the end product.
- Creation of a legally compliant labelling proposal.

Prerequisites:

n.a.

Lecture/Seminar profile:**Mathematics II (23_MAT2IL_ENG)**

Degree course	LTE.ba
Course title	Mathematics II
Course code	23_MAT2IL_ENG
Level	Bachelor
Term	SS27
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:**Raw Material Sciences (23_RSK2VO_ENG)**

Degree course	LTE.ba
Course title	Raw Material Sciences
Course code	23_RSK2VO_ENG
Level	Bachelor
Term	SS27
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:

Biology, Microbiology I

Lecture/Seminar profile:**Stoichiometry II (23_STÖ2UE_ENG)**

Degree course	LTE.ba
Course title	Stoichiometry II
Course code	23_STÖ2UE_ENG
Level	Bachelor
Term	SS27
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	5

Learning objectives:

n.a.

Content:

- Substance analysis: Dimensional analysis, gravimetry, calculation nitrogen according to Kjeldahl, solubility, pH; buffer system, reaction equations, solubility product.
- Evaluation: linear regression (calibration of quantitative analytical methods).
- Evaluation of calibration results.
- Calculation of sample results (from calibration and consideration of initial weight).

I

Prerequisites:

Fundamentals of Chemistry I, Stoichiometry I, Analytical Chemistry I

Lecture/Seminar profile:**Chemistry II (24_CHE2VO_ENG)**

Degree course	LTE.ba
Course title	Chemistry II
Course code	24_CHE2VO_ENG
Level	Bachelor
Term	SS27
Lecturer	
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:**Internship (23_BAA6PT)**

Degree course	WFT.ba
Course title	Internship/Project
Course code	23_BAA6PT
Level	Bachelor
Term	SS27
Lecturer	GmBH BIS Meldung Korrektur (Nicht Exportiert)
Contact hours per week	0,5
ECTS credits	8
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	1

Learning objectives:

n.a.

Content:

The subject of the Internship / Industrial Training is preferentially orientated on special problems out of industrial practise.

The professional practical training must have project character. The aim is to solve a problem or connected problems on an adequate quality level, corresponding with the academic level of the education.

The work is supervised by a professor from the university of applied science and eventually a tutor from the company, where the professional practical training is carried out.

Prerequisites:

all preceding courses of the study program

Lecture/Seminar profile:**English II (23_ENG2UE)**

Degree course	WFT.ba
Course title	English II
Course code	23_ENG2UE
Level	Bachelor
Term	SS27
Lecturer	GmBH BIS Meldung Korrektur (Nicht Exportiert)
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:

n.a.

Prerequisites:

n.a.

Lecture/Seminar profile:**Project II (23_PRO2PT)**

Degree course	WFT.ba
Course title	Project II
Course code	23_PRO2PT
Level	Bachelor
Term	SS27
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:**Project IV (23_PRO4PT)**

Degree course	WFT.ba
Course title	Project IV
Course code	23_PRO4PT
Level	Bachelor
Term	SS27
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	3

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:**Project VI (23_PRO6PT)**

Degree course	WFT.ba
Course title	Project VI
Course code	23_PRO6PT
Level	Bachelor
Term	SS27
Lecturer	GmBH BIS Meldung Korrektur (Nicht Exportiert)
Contact hours per week	0,5
ECTS credits	4
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	1

Learning objectives:

n.a.

Content:

The subject of the Internship / Industrial Training is preferentially orientated on special problems out of industrial practise.

The professional practical training must have project character. The aim is to solve a problem or connected problems on an adequate quality level, corresponding with the academic level of the education.

The work is supervised by a professor from the university of applied science and eventually a tutor from the company, where the professional practical training is carried out.

Prerequisites:

all preceding courses of the study program

Lecture/Seminar profile:**Interdisciplinary Project 1 (23_IPA4PT)**

Degree course	WL.ba
Course title	Interdisciplinary Project 1
Course code	23_IPA4PT
Level	Bachelor
Term	SS27
Lecturer	Manuel Frank, Harald Meierhofer
Contact hours per week	2
ECTS credits	4
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	6

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:**Anlagenengineering II (25_AEN2IL)**

Degree course	AB.ma
Course title	Anlagenengineering II
Course code	25_AEN2IL_E
Level	Master
Term	SS27
Lecturer	Oliver Laic, Karl-Heinz Greßlehner, Christof Lanzerstorfer
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	German/English
Places for international students	3

Learning objectives:

n.a.

Content:

Emission reduction system

Insulation

Noise protection measures

Coating and corrosion protection

Fire protection

Electrical ancillary systems

Specification and relevant standards and regulations

Prerequisites:

Fundamentals of Mechanics and Materials Science

Lecture/Seminar profile:**Project scheduling & Schedule control (MS Project) (25_APL2IL)**

Degree course	AB.ma
Course title	Project scheduling & Schedule control (MS Project)
Course code	25_APL2IL_E
Level	Master
Term	SS27
Lecturer	David Kronawettleitner
Contact hours per week	1
ECTS credits	1,5
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:

n.a.

Content:

Project scheduling & Schedule control (MS Project)

The plant engineering project

Project phases and associated engineering depth

Structure of plant construction schedules (framework plan, control plan, supplier schedule)

In-depth scheduling in plant construction using a practical example

Functionality of common scheduling software (using MS Project as an example)

Prerequisites:

Module AP1

Lecture/Seminar profile:**Software supported plant engineering (25_CAP2UE)**

Degree course	AB.ma
Course title	Software supported plant engineering
Course code	25_CAP2UE_E
Level	Master
Term	SS27
Lecturer	
Contact hours per week	1
ECTS credits	5
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:

n.a.

Content:

Computer-aided integrated system planning
Getting to know and using software for integrated system planning

Prerequisites:

Module AP1

Lecture/Seminar profile:**Electrical Engineering in Plant Construction (25_ETA2IL)**

Degree course	AB.ma
Course title	Electrical Engineering in Plant Construction
Course code	25_ETA2IL_E
Level	Master
Term	SS27
Lecturer	Udo Proksch
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:

Grounding and lightning protection,
electrical installation

Power distribution

Control technology. Measurement technology

Sensors, signal processing

Automation technology, hardware planning, control concepts, and interface communication

Prerequisites:

Fundamentals of mechanics, materials science, chemistry, and electrical engineering.

Lecture/Seminar profile:**Interdisciplinary project planning (25_IAPT2PT)**

Degree course	AB.ma
Course title	Interdisciplinary project planning
Course code	25_IAPT2PT_E
Level	Master
Term	SS27
Lecturer	David Kronawettleitner
Contact hours per week	2
ECTS credits	3,5
Course type	Project
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:

n.a.

Content:

Comprehensive technical planning of a complete system
In-depth planning of a complete system with a wide range of aspects using various IT software (e.g. Cadison, Archicad, Autocad, etc..)
Process flow diagram (process & material flow planning)
Layout planning (layout planning, main utilization areas, secondary utilization areas, etc..)
Planning of expansion & reserve areas (plant expansion planning)
Plant-side traffic route planning
Planning of. Loading & unloading facilities
Building planning (office & product buildings, interim storage areas & buildings)

Prerequisites:

Module AP1

Lecture/Seminar profile:**Plant construction contracts (25_PCC2SE)**

Degree course	AB.ma
Course title	Plant construction contracts
Course code	25_PCC2SE_E
Level	Master
Term	SS27
Lecturer	Albert Angerbauer
Contact hours per week	2
ECTS credits	4
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:

n.a.

Content:

Contract types (supply, service, turnkey)
Operator models
The essential components of the plant construction contract
The specifications and their forms,
Specifications, documentation, and their legal significance
Liability and guarantees
Forms of cooperation in plant construction
Patents, licenses, protective clauses

Prerequisites:

Law and project management

Lecture/Seminar profile:**Project controlling (25_PRC2IL)**

Degree course	AB.ma
Course title	Project controlling
Course code	25_PRC2IL_E
Level	Master
Term	SS27
Lecturer	David Kronawettleitner
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:

Tasks and methods of project controlling (cost, schedule, and quality con-trolling)
Organization of project controlling (corporate controlling, project control-ling)
Multi-project controlling / portfolio management
Strategic and operational project controlling in the pre-project and imple-mentation phases
Organizational integration of the project controller / project manager
Procedures in project controlling
Cost controlling (running costing, cash flow, risk buffer, etc.)
Schedule controlling (critical path, milestone trend analysis, total buffer, free buffer, etc.)
Performance controlling (progress measurement methods, earned value analyses, etc.)
Project scorecards for project management and control
Reporting
Organization of project controlling
The role of the project controller
Analysis and evaluation of projects and plan deviations (error analysis)
Determination of corrective actions
Measures to prevent recurrence of errors

Prerequisites:

Fundamentals of project management and business administration

Lecture/Seminar profile:**Damage analysis (25_SAN2IL)**

Degree course	AB.ma
Course title	Damage analysis
Course code	25_SAN2IL_E
Level	Master
Term	SS27
Lecturer	Johann Angeli
Contact hours per week	1
ECTS credits	1,5
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:

n.a.

Content:

Typical damage patterns and causes
Failure mechanisms
Systematic damage analysis
Mechanically induced cracks and fractures
Cracks and fractures in connection with welded joints
Thermally induced cracks
Corrosion
Wear and tear

Prerequisites:

Fundamentals of mechanics, materials science, chemistry, and electrical engineering.

Lecture/Seminar profile:**Construction & Form (COF2SE)**

Degree course	Bl.ma
Course title	Construction & Form
Course code	COF2SE
Level	Master
Term	SS27
Lecturer	
Contact hours per week	1
ECTS credits	2
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:

n.a.

Content:

In this LV design criteria shall be shown. The students know the historical development of elementary structures and understand the connection between design and construction. Examples are analysed and discussed. In a team, a small project work, which thematic core will change annually, is carried out for a given task/problem (problem-based learning), using practical design techniques as well as static and building physics methods. The design is presented according to the announcements in civil engineering in building construction (Master, Version 2 of 23. 3. 2020) by means of plans and models. The students are asked to present and defend their final ideas. Independent working is encouraged.

Prerequisites:

n.a.

Lecture/Seminar profile:**Negotiation & moderation (KFK2UE)**

Degree course	Bl.ma
Course title	Negotiation & moderation
Course code	KFK2UE
Level	Master
Term	SS27
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	Bl.ma
Course title	Leadership
Course code	KFK4UE
Level	Master
Term	SS27
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:**Management Accounting (20_ACC2IL)**

Degree course	DEIA.Ma/AMM.Ma
Course title	Management Accounting
Course code	20_ACC2IL
Level	Master
Term	SS27
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 financial 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:**Academic working (20_ACW2IL)**

Degree course	DEIA.Ma/AMM.Ma
Course title	Academic working
Course code	20_ACW2IL
Level	Master
Term	SS27
Lecturer	
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:

n.a.

Content:

- Fundamentals of scientific research
- Research design: goals, questions, methods
- Academic writing: sources, types of texts, style
- Efficient use of information sources

Prerequisites:

All previous modules

Lecture/Seminar profile:**Automotive IT Systems 2 (20_AIT2IL)**

Degree course	DEIA.Ma/AMM.Ma
Course title	Automotive IT Systems 2
Course code	20_AIT2IL
Level	Master
Term	SS27
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 (particularly 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	DEIA.Ma/AMM.Ma
Course title	Drive Systems and E-Mobility I
Course code	20_DSE2IL
Level	Master
Term	SS27
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:
 - o management of functional safety
 - o concept phase
 - o product development: system level
 - o product development: hardware level
 - o product development: software level
 - o production, operation and taking out of operation
 - o support processes
 - o ASIL- and safety-oriented analyses

Prerequisites:

n.a.

Lecture/Seminar profile:**Drive Train Control Systems (20_DTC2IL)**

Degree course	DEIA.Ma/AMM.Ma
Course title	Drive Train Control Systems
Course code	20_DTC2IL
Level	Master
Term	SS27
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, differential 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	DEIA.Ma/AMM.Ma
Course title	Functional Safety
Course code	20_FUS2IL
Level	Master
Term	SS27
Lecturer	
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:
 - o management of functional safety
 - o concept phase
 - o product development: system level
 - o product development: hardware level
 - o product development: software level
 - o production, operation and taking out of operation
 - o support processes
 - o ASIL- and safety-oriented analyses

Prerequisites:

n.a.

Lecture/Seminar profile:**Market Oriented Management (20_MOM2IL)**

Degree course	DEIA.Ma/AMM.Ma
Course title	Market Oriented Management
Course code	20_MOM2IL
Level	Master
Term	SS27
Lecturer	
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	DEIA.Ma/AMM.Ma
Course title	Automotive Quality Management 2
Course code	20_QMA2IL
Level	Master
Term	SS27
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:**Intercultural Leadership and Management (21_SSK4PR)**

Degree course	EE.ma
Course title	Intercultural Leadership and Management
Course code	21_SSK4PR
Level	Master
Term	SS27
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	5

Learning objectives:

n.a.

Content:

Basics of Intercultural Management;
Intercultural decision-making and responsibility for a successful management in intercultural business situations;
Specific characteristics in international and intercultural project management
Leadership in an international context;
Models, functions and tasks of leadership;
Key competences of executives and connection between leadership and personality;
The role of the executive;
Enhancements of intercultural key competences

Prerequisites:

n.a.

Lecture/Seminar profile:**Computer Aided Design I (25_CAID2UE)**

Degree course	IPM.ma
Course title	Computer Aided Design I
Course code	25_CAID2UE
Level	Master
Term	SS27
Lecturer	
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:

n.a.

Lecture/Seminar profile:**Change Management (25_CHM2SE)**

Degree course	IPM.ma
Course title	Change Management
Course code	25_CHM2SE
Level	Master
Term	SS27
Lecturer	
Contact hours per week	1
ECTS credits	2
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	10

Learning objectives:

n.a.

Content:

- Understanding the role of change management as driver for innovation management and new business development
- 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 management

Prerequisites:

n.a.

Lecture/Seminar profile:**Controlling (25_CTR2IL)**

Degree course	IPM.ma
Course title	Controlling
Course code	25_CTR2IL
Level	Master
Term	SS27
Lecturer	Clemens Redl
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:

- 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 (25_DAA2IL)**

Degree course	IPM.ma
Course title	Data Analysis
Course code	25_DAA2IL
Level	Master
Term	SS27
Lecturer	Julian Leon Grimm, Gernot Stübl
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	2

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 (25_DET2IL)**

Degree course	IPM.ma
Course title	Design Theory
Course code	25_DET2IL
Level	Master
Term	SS27
Lecturer	
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:

n.a.

Lecture/Seminar profile:**Design Prototyping (25_EHW2SE)**

Degree course	IPM.ma
Course title	Design Prototyping
Course code	25_EHW2SE
Level	Master
Term	SS27
Lecturer	
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:

n.a.

Lecture/Seminar profile:**Product Lifecycle Management (25_LCM2IL)**

Degree course	IPM.ma
Course title	Product Lifecycle Management
Course code	25_LCM2IL
Level	Master
Term	SS27
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	5

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 (25_MBE2IL)**

Degree course	IPM.ma
Course title	Model Based Engineering
Course code	25_MBE2IL
Level	Master
Term	SS27
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:

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:**Multiprojectmanagement (25_MPM2IL)**

Degree course	IPM.ma
Course title	Multiprojectmanagement
Course code	25_MPM2IL
Level	Master
Term	SS27
Lecturer	
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 roadmapping, ...) portfolio decisions and corporate strategy,

Prerequisites:

n.a.

Lecture/Seminar profile:**New Business Development (25_NBD2IL)**

Degree course	IPM.ma
Course title	New Business Development
Course code	25_NBD2IL
Level	Master
Term	SS27
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	3

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:

n.a.

Lecture/Seminar profile:**New Product Development (25_PEP2IL)**

Degree course	IPM.ma
Course title	New Product Development
Course code	25_PEP2IL
Level	Master
Term	SS27
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:

- 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 (25_REE2IL)**

Degree course	IPM.ma
Course title	Requirements Engineering
Course code	25_REE2IL
Level	Master
Term	SS27
Lecturer	
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:

- 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, prioritisation and validation
- Writing in a Natural Language
- Requirements management

Prerequisites:

n.a.

Lecture/Seminar profile:**Sustainability (25_SUS2IL)**

Degree course	IPM.ma
Course title	Sustainability
Course code	25_SUS2IL
Level	Master
Term	SS27
Lecturer	
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:

- 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 (25_VAR2IL)**

Degree course	IPM.ma
Course title	Virtual and Augmented Reality
Course code	25_VAR2IL
Level	Master
Term	SS27
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	4

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:**Design Visualization and Presentation II (25_ZET2SE)**

Degree course	IPM.ma
Course title	Design Visualization and Presentation II
Course code	25_ZET2SE
Level	Master
Term	SS27
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:

n.a.

Lecture/Seminar profile:**Master Thesis (21_ADA4PT)**

Degree course	LCW.ma
Course title	Master Thesis
Course code	21_ADA4PT
Level	Master
Term	SS27
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	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	SS27
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	4

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:**Dynamics (22_DYN2IL_Inc)**

Degree course	MB.ma
Course title	Dynamics
Course code	22_DYN2IL_Inc
Level	Master
Term	SS27
Lecturer	Martin Egger
Contact hours per week	3
ECTS credits	6
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 (22_MOM2IL_Inc)**

Degree course	MB.ma
Course title	Mechanics of Materials
Course code	22_MOM2IL_Inc
Level	Master
Term	SS27
Lecturer	Sophia Keller
Contact hours per week	2
ECTS credits	6
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:**R&D Project (22_PRO4PT_for Incomings)**

Degree course	MB.ma
Course title	R&D Project
Course code	22_PRO4PT_for Incomings
Level	Master
Term	SS27
Lecturer	
Contact hours per week	0,5
ECTS credits	10
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	5

Learning objectives:

n.a.

Content:

Individual assignment dealing with an advanced (graduate level) project in the field of mechanical engineering. The tasks are connected to current R&D-Projects of in-house Research groups and external industrial or scientific partners. These projects should allow the students to apply their skills and knowledge (technical, social and projekt-management) onto a real-world problem.

Prerequisites:

n.a.

Lecture/Seminar profile:**Battery Technology (24_BAT2LE)**

Degree course	SES.ma
Course title	Battery Technology
Course code	24_BAT2LE
Level	Master
Term	SS27
Lecturer	
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:

Basics of energy conversion; Capacitor batteries, lithium-ion batteries; Traction and storage batteries (lead, nickel, sodium); High-energy batteries; Redox-flow batteries; Application range of the different battery technologies;
System integration; Legal framework conditions

Prerequisites:

Electrical Engineering, Renewables

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	SS27
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	SS27
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:**Modern Energy Transport and Distribution (24_ETD2LE)**

Degree course	SES.ma
Course title	Modern Energy Transport and Distribution
Course code	24_ETD2LE
Level	Master
Term	SS27
Lecturer	
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:

Essentials of Energy Transport Smart Grids
Electrical storage systems like batteries and hydrogen based systems
Technical operation, facility management Micro grids as island systems
Hybrid systems (e.g. diesel in combination with PV and/or wind) Storage systems electrically and thermal
Grid connection of decentralized power plants
Balancing in transport and distribution systems

Prerequisites:

Electrical Engineering, Solar and Wind Energy

Lecture/Seminar profile:**Modern Energy Transport and Distribution (24_ETD2PR)**

Degree course	SES.ma
Course title	Modern Energy Transport and Distribution
Course code	24_ETD2PR
Level	Master
Term	SS27
Lecturer	
Contact hours per week	0,8
ECTS credits	1,2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:

n.a.

Content:

Essentials of Energy Transport Smart Grids
Electrical storage systems like batteries and hydrogen based systems
Technical operation, facility management Micro grids as island systems
Hybrid systems (e.g. diesel in combination with PV and/or wind) Storage systems electrically and thermal
Grid connection of decentralized power plants
Balancing in transport and distribution systems

Prerequisites:

Electrical Engineering, Solar and Wind Energy

Lecture/Seminar profile:**Hydro Power (24_HYD2IC)**

Degree course	SES.ma
Course title	Hydro Power
Course code	24_HYD2IC
Level	Master
Term	SS27
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:**Hydrogen Technology (24_HYT2LE)**

Degree course	SES.ma
Course title	Hydrogen Technology
Course code	24_HYT2LE
Level	Master
Term	SS27
Lecturer	
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:

Available energy resources, chemical basics; Hydrogen production; Application areas of hydrogen; Hydrogen infrastructure and technology; Safety aspects; Basics of fuel cells, application areas of fuel cells

Prerequisites:

Electrical Engineering, Renewables

Lecture/Seminar profile:**International Project Management (24_IPM2IC)**

Degree course	SES.ma
Course title	International Project Management
Course code	24_IPM2IC
Level	Master
Term	SS27
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:**Large-Scale Solar Power Plants (24_LSS2IC)**

Degree course	SES.ma
Course title	Large-Scale Solar Power Plants
Course code	24_LSS2IC
Level	Master
Term	SS27
Lecturer	
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:

Solar resource estimation (advanced level)
Solar inverter concepts and advanced grid features
PV and wind energy project development
Planning and simulation of large-scale solar power plants using modern design and simulation tools (WAsP, PV Syst, or similar)
System integration
Operation and monitoring of large-scale solar power plants

Prerequisites:

Electrical Engineering, Solar and Wind Energy

Lecture/Seminar profile:**Scientific Programming (24_SCP2IC)**

Degree course	SES.ma
Course title	Scientific Programming
Course code	24_SCP2IC
Level	Master
Term	SS27
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	6

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_20
Level	Master
Term	SS27
Lecturer	
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_20
Level	Master
Term	SS27
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_20
Level	Master
Term	SS27
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	3

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:**Anlagenengineering II (25_AEN2IL)**

Degree course	AB.ma
Course title	Anlagenengineering II
Course code	25_AEN2IL
Level	Master
Term	SS27
Lecturer	Oliver Laic, Karl-Heinz Greßlehner, Christof Lanzerstorfer
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	German/English
Places for international students	3

Learning objectives:

n.a.

Content:

Emission reduction system
Insulation
Noise protection measures
Coating and corrosion protection
Fire protection
Electrical ancillary systems
Specification and relevant standards and regulations

Prerequisites:

Fundamentals of Mechanics and Materials Science

Lecture/Seminar profile:**English II (25_ENG2UE)**

Degree course	AB.ma
Course title	English II
Course code	25_ENG2UE
Level	Master
Term	SS27
Lecturer	Tina Wieden
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:

n.a.

Content:

International Conferences:

Reading and composition of technical/scientific papers, abstracts.

Vorträge: giving speeches, talks, public lectures on scientific/engineering/business subjects.

Research papers: reading, understanding, writing.

Advanced general English: reading/discussion of topical and ethical issues

Proficiency-level grammar and practice exercises

Advanced vocabulary and language in context

Focus on problem areas in language and style: e.g. phrasal verbs, register, inversion, emphasis, unreal tenses, text features and so on.

Prerequisites:

n.a.

Lecture/Seminar profile:

Interdisciplinary project planning (25_IAPT2PT)

Degree course	AB.ma
Course title	Interdisciplinary project planning
Course code	25_IAPT2PT
Level	Master
Term	SS27
Lecturer	David Kronawettleitner
Contact hours per week	2
ECTS credits	3,5
Course type	Project
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:

n.a.

Content:

Comprehensive technical planning of a complete system
In-depth planning of a complete system with a wide range of aspects using various IT software (e.g. Cadison, Archicad, Autocad, etc..)
Process flow diagram (process & material flow planning)
Layout planning (layout planning, main utilization areas, secondary utilization areas, etc..)
Planning of expansion & reserve areas (plant expansion planning)
Plant-side traffic route planning
Planning of. Loading & unloading facilities
Building planning (office & product buildings, interim storage areas & buildings)

Prerequisites:

Module AP1

Lecture/Seminar profile:**Plant construction contracts (25_PCC2SE)**

Degree course	AB.ma
Course title	Plant construction contracts
Course code	25_PCC2SE
Level	Master
Term	SS27
Lecturer	Albert Angerbauer
Contact hours per week	2
ECTS credits	4
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:

n.a.

Content:

Contract types (supply, service, turnkey)
Operator models
The essential components of the plant construction contract
The specifications and their forms,
Specifications, documentation, and their legal significance
Liability and guarantees
Forms of cooperation in plant construction
Patents, licenses, protective clauses

Prerequisites:

Law and project management

Lecture/Seminar profile:**Project controlling (25_PRC2IL)**

Degree course	AB.ma
Course title	Project controlling
Course code	25_PRC2IL
Level	Master
Term	SS27
Lecturer	David Kronawettleitner
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:

Tasks and methods of project controlling (cost, schedule, and quality con-trolling)
Organization of project controlling (corporate controlling, project control-ling)
Multi-project controlling / portfolio management
Strategic and operational project controlling in the pre-project and imple-mentation phases
Organizational integration of the project controller / project manager
Procedures in project controlling
Cost controlling (running costing, cash flow, risk buffer, etc.)
Schedule controlling (critical path, milestone trend analysis, total buffer, free buffer, etc.)
Performance controlling (progress measurement methods, earned value analyses, etc.)
Project scorecards for project management and control
Reporting
Organization of project controlling
The role of the project controller
Analysis and evaluation of projects and plan deviations (error analysis)
Determination of corrective actions
Measures to prevent recurrence of errors

Prerequisites:

Fundamentals of project management and business administration