UNIVERSITY OF APPLIED SCIENCES UPPER AUSTRIA

Course Offer

for Incoming Exchange Students

Winter Semester 2025

School of Engineering

fh-ooe.at/en/wels-campus

GENERAL INFORMATION

Choosing Courses

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

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

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

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

Academic Calendar

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

TYPES OF CLASSES

Lectures and Integrated Courses (VO, ILV, IC)

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

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

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

Block Courses

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

Excursions

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

Project

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

NOTE: Courses and ECTS are subject to change at any time.

Course Packages

Automation/Electrical/Mechanical Engineering - BASIC			
Programme	Code	Course Name	ECTS
EE.B	EEN1LE	Circuit Analysis	3
EE.B	EEN1PR	Circuit Analysis	3
EE.B	INF1LE	Information Technology	2
EE.B	INF1PR	Information Technology	1
EE.B	SSK1SE	Communication with Intercultural Aspects	1.5
EE.B	GEN1IC	Powerplants for Electrical Power Generation	3
IPEM.B	MEC1VO	Mechanics I	3
IPEM.B	MEC1UE	Mechanics I	2
MB.M	MOM2IL	Mechanics of Materials	3
		Total	21.5

Environmental & Chemical Engineering - BASIC			
Programme	Code	Course Name	ECTS
LTE.B	AYC1VO	Analytical Chemistry I	2
LTE.B	CHE1VO	Chemistry I	2
LTE.B	CHE1LB	Chemistry I	3
LTE.B	GBI1VO	Biology	3
LTE.B	STÖ1UE	Stoichiometry I	2
BUT.B	BCH3LB	Biochemistry	3
AB.M	NES1IL	Sustainable Energy Systems	3
AB.M	NES1UE	Sustainable Energy Systems	1.5
AB.M	KFK1UE	Inter-cultural Communication	2
		Total	21.5

Engineering Management / Product Development / Innovation - BASIC			
Programme	Code	Course Name	ECTS
IPEM.B	INF1VO	Information Technology	1
IPEM.B	INF1UE	Information Technology	2
IPEM.B	MEC1VO	Mechanics 1	3
IPEM.B	MEC1UE	Mechanics 1	2
IPEM.B	MOM1IL	Market-oriented Management	2
IPEM.B	PEW1IL	Innovation & Product Development	3
IPEM.B	SKK1SE	Social Skills: Communication	2
IPM.M	IND1IL	Design Fundamentals	2
IPM.M	EGD1IL	Design Visualization and Presentation I	2
IPM.M	EGD1SE	Design Visualization and Presentation I	2
		Total	21

Automation/Electrical/Mechanical Engineering - ADVANCED			
Programme	code	Course	ECTS
AMM.M	VCD1IL	Vehicle Components & Driving Dynamics	4
AMM.M	SAC1IL	Sensors and Micro Actuators	3
EE.M	HEI3LE	Advanced High Voltage Engineering	4
EE.M	MES1LE	Signal Analysis and Machine Learning	4
LCW.B	FEM5VO	Finite Element Simulation - basics	1
LCW.B	FEM5UE	Finite Element Simulation - basics	3
IPM.M	DIF3VO	Digital Factory	2
		Total	21

Environmental & Chemical Engineering - ADVANCED			
Programme	Code	Course Name	ECTS
BUT.B	BCH3LB	Biochemistry	3
SES.M	SUS1IC	Sustainable Development	2.5
SES.M	SOL1LE	Solar Energy	2.5
SES.M	WIN1LE	Wind Energy	2.5
SES.M	ENM3IC	Energy Meteorolgy	2.5
SES.M	ORE3IC	Operations Research for Energy Systems	2.5
BI.M	KFK1UE	Cross Cultural Communication	2.5
AB.M	MPC3UE	Management of Project Crisis	2
		Total	20

Engineering Management / Product Development / Innovation - ADVANCED			
Programme	Code	Course Name	ECTS
IPM.M	MEC1IL	Mechatronics	7
IPM.M	MRI3IL	Customer Integration in New Product Development	2
IPM.M	DIF3VO	Digital Factory	2
IPM.M	IMM3IL	International Marketing & Management	2
AMM.M	MBE1IL	Model Based Engineering 1	5
AMM.M	PRM1IL	Production Management	3
AMM.M	LAW3VO	Business Law & Intellectual Property Rights	2
		Total	23

Course Packages

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

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

Bachelor's Degree Programme

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Agricultural Technology and Management (Bachelor, Wels Campus)							
AGR.ba	23_AGR1IL_ENG	Agricultural technology I: Basics of agricultural production	Integrated course	1	Bachelor	3	12
Automation Engineering (Bachelor, Wels Campus)							
AT.ba	23_IBV5LB	Industrial Image Processing	Laboratory session	5	Bachelor	2	13
AT.ba	23_IBV5VO	Industrial Image Processing	Lecture	5	Bachelor	2	14
Civil Engineering (Bachelor, Wels Campus)							
BI.ba	20_SBE5SE	Sociology & Building Ethics (Elective course to be confirmed)	Seminar	5	Bachelor	1,5	15
BI.ba	20_SKK3UE	Conflict Management & Mediation	Practice-oriented session	3	Bachelor	2	16
Bio- and Environmental Technology (Bachelor, Wels Campus)							
BUT.ba	23_BCH3LB	Biochemistry	Laboratory session	3	Bachelor	3	17
Electrical Engineering (Bachelor, Wels Campus)							
EE.ba	21_BUS5LE	Business Administration	Lecture	5	Bachelor	2	18
EE.ba	21_BUS5PR	Business Administration	Practice-oriented session	5	Bachelor	2	19
EE.ba	21_CEN5LB	Control Engineering	Laboratory session	5	Bachelor	3	20
EE.ba	21_CEN5LE	Control Engineering	Lecture	5	Bachelor	4	21
EE.ba	21_EEN1LE	Circuit Analysis	Lecture	1	Bachelor	3	23
EE.ba	21_EEN1PR	Circuit Analysis	Practice-oriented session	1	Bachelor	3	24
EE.ba	21_EEN3LE	Electromagnetic Fields	Lecture	3	Bachelor	4	25
EE.ba	21_EEN3PR	Electromagnetic Fields	Practice-oriented session	3	Bachelor	2	27
EE.ba	21_EPG5LB	Power System Analysis	Laboratory session	5	Bachelor	2	28
EE.ba	21_EPG5LE	Electrical Power Grids and Systems	Lecture	5	Bachelor	5	29

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Electrical Engineering (Bachelor, Wels Campus)							
EE.ba	21_EPG5PR	Power System Analysis	Practice-oriented session	5	Bachelor	2	31
EE.ba	21_GEN1IC	Powerplants for Electrical Power Generation	Integrated course	1	Bachelor	3	32
EE.ba	21_INF1LE	Information Technology	Lecture	1	Bachelor	2	34
EE.ba	21_INF1PR	Information Technology	Practice-oriented session	1	Bachelor	1	36
EE.ba	21_MAT1LE	Mathematics 1	Lecture	1	Bachelor	5	37
EE.ba	21_MAT1PR	Mathematics 1	Practice-oriented session	1	Bachelor	2,5	39
EE.ba	21_MES3LE	Measurement Engineering for Electrical Energy Systems	Lecture	3	Bachelor	3	40
EE.ba	21_PRM3IC	Project Management	Integrated course	3	Bachelor	2	42
EE.ba	21_SSK1SE	Communication with intercultural aspects	Seminar	1	Bachelor	1,5	44
School of Engineering (Bachelor, Wels Campus)							
FWE	DAF_A1.1_UE	German Language A 1.1	Practice-oriented session	1	Bachelor	2	45
FWE	DAF_A2.1_UE	German Language A 2.1	Practice-oriented session	1	Bachelor	2	46
FWE	DAF_B1.1_UE	German Language B 1.1	Practice-oriented session	1	Bachelor	2	48
FWE	DAF_B2.1_UE	German Language B 2.1	Practice-oriented session	1	Bachelor	2	50
FWE	DAF_C1.1_UE	German Language C 1.1	Practice-oriented session	1	Bachelor	2	51
FWE	DAF_C2.1_UE	German Language C2.1	Practice-oriented session	1	Bachelor	2	52
Innovation, Product & Engineering Management (Bachelor, Wels Campus)							
IPEM.ba	22_ENG5UE	English V	Practice-oriented session	5	Bachelor	2	53
IPEM.ba	24_DMA3UE	Digital Marketing	Practice-oriented session	3	Bachelor	2	54
IPEM.ba	24_ETE3IL	Electrical Engineering II	Integrated course	3	Bachelor	2,5	55

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Innovation, Product & Engineering Management (Bachelor, Wels Campus)							
IPEM.ba	24_ETE3LB	Electrical Engineering II	Laboratory session	3	Bachelor	2,5	56
IPEM.ba	24_GVM3UE	Basis, Visualization and Model making	Practice-oriented session	3	Bachelor	2	57
IPEM.ba	24_GVM3VO	Visualization and Model Building Fundamentals	Lecture	3	Bachelor	1	58
IPEM.ba	24_INO3IL	Technology & Innovationsmanagement II	Integrated course	3	Bachelor	3	59
IPEM.ba	24_JUS3VO	Legal Foundations	Lecture	3	Bachelor	1	60
IPEM.ba	24_MFO3SE	Market Research II	Seminar	3	Bachelor	3	61
IPEM.ba	24_MUI3IL	Modern User Interface Design I	Integrated course	3	Bachelor	3	62
IPEM.ba	24_MUI3IL	Modern User Interface Design II	Integrated course	3	Bachelor	2	64
IPEM.ba	24_PMT3IL	Product Management	Integrated course	3	Bachelor	3	65
IPEM.ba	24_QDA3UE	Quantitative data analysis	Practice-oriented session	3	Bachelor	2	66
IPEM.ba	24_QDA3VO	Quantitative Data Analysis	Lecture	3	Bachelor	2,5	67
IPEM.ba	24_SKK3SE	Social Skills: Teamwork	Seminar	3	Bachelor	2	68
IPEM.ba	25_CAD1UE	CAD Basis	Practice-oriented session	1	Bachelor	4	69
IPEM.ba	25_INF1UE	Information Technology	Practice-oriented session	1	Bachelor	2	71
IPEM.ba	25_INF1VO	Information Technology	Lecture	1	Bachelor	1	72
IPEM.ba	25_MAT1UE	Mathematics I	Practice-oriented session	1	Bachelor	2	73
IPEM.ba	25_MAT1VO	Mathematics I	Lecture	1	Bachelor	4	74
IPEM.ba	25_MEC1UE	Mechanics I	Practice-oriented session	1	Bachelor	2	75
IPEM.ba	25_MEC1VO	Mechanics I	Lecture	1	Bachelor	3	76

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_MOM1IL	Market-oriented management	Integrated course	1	Bachelor	2	77
IPEM.ba	25_PEW1IL	Innovation & Product Development	Integrated course	1	Bachelor	3	78
IPEM.ba	25_SKK1SE	Social Skills: Communication	Seminar	1	Bachelor	2	80
IPEM.ba	25_TEZ1IL	Technical Drawing Basis	Integrated course	1	Bachelor	2	81
Lightweight Construction and Composite Materials (Bachelor, Wels Campus)							
LCW.ba	23_ENG1UE	English I	Practice-oriented session	1	Bachelor	1	83
LCW.ba	23_ENG3UE	English III	Practice-oriented session	3	Bachelor	1	85
LCW.ba	23_ENG5UE	English IV	Practice-oriented session	5	Bachelor	1	86
LCW.ba	23_FEM5UE	Finite Element Simulation - basics	Practice-oriented session	5	Bachelor	3	87
LCW.ba	23_FEM5VO	Finite element simulation - basics	Lecture	5	Bachelor	1	88
LCW.ba	23_IPA5PT	Interdisciplinary project work II	Project	5	Bachelor	4	89
Food Technology and Nutrition (Bachelor, Wels Campus)							
LTE.ba	23_AYC1VO_ENG	Analytical Chemistry I	Lecture	1	Bachelor	2	90
LTE.ba	23_BWL1IL_ENG	Business Administration I	Integrated course	1	Bachelor	2	91
LTE.ba	23_CHE1LB_ENG	Chemistry I	Laboratory session	1	Bachelor	3	92
LTE.ba	23_CHE1VO_ENG	Chemistry I	Lecture	1	Bachelor	2	93
LTE.ba	23_FER5IL_ENG	Brewing Science	Integrated course	5	Bachelor	1	94
LTE.ba	23_GBI1VO_ENG	Biology	Lecture	1	Bachelor	3	95
LTE.ba	23_LMT1IL_ENG	Food Technology I	Integrated course	1	Bachelor	3	96
LTE.ba	23_MAT1IL_ENG	Mathematics I	Integrated course	1	Bachelor	3	97

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Food Technology and Nutrition (Bachelor, Wels Campus)							
LTE.ba	23_STÖ1UE_ENG	Stoichiometry I	Practice-oriented session	1	Bachelor	2	98
LTE.ba	24_AGP1IL_ENG	Applied physics	Integrated course	1	Bachelor	5	99
Materials and Process Engineering (Bachelor, Wels Campus)							
WFT.ba	23_ENG1UE	English I	Practice-oriented session	1	Bachelor	1	100
WFT.ba	23_ENG3UE	English III	Practice-oriented session	3	Bachelor	1	102
WFT.ba	23_PRO1PT	Project I	Project	1	Bachelor	4	103
WFT.ba	23_PRO3PT	Project III	Project	3	Bachelor	4	104
WFT.ba	23_PRO5PT	Project V	Project	5	Bachelor	4	105
Product Design and Technical Communication (Bachelor - Part Time, Wels Campus)							
PDK.ba	22_ENG5UE	English IV:English for technical communicators	Practice-oriented session	5	Bachelor	1	106
Materials and Process Engineering (Bachelor - Part Time, Wels Campus)							
WFT.ba	bb_ENG1UE	English I	Practice-oriented session	1	Bachelor	2	107
WFT.ba	bb_PRO1PT	Project I	Project	1	Bachelor	4	109

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_ABS3IL_E	Plant Engineering - Case Studies	Integrated course	3	Master	8,5	110
AB.ma	25_AEN1VO_E	Plant Engineering	Lecture	1	Master	3	111
AB.ma	25_ANG3ILV_E	Plant permission	Integrated course	3	Master	1,5	112
AB.ma	25_ANS3IL_E	Plant Safety	Lecture	3	Master	1,5	113
AB.ma	25_ANS3VO_E	Safety Engineering	Lecture	3	Master	1,5	114
AB.ma	25_APL1VO_E	Overall Plant Engineering I	Lecture	1	Master	1,5	115
AB.ma	25_BAU1VO_E	Civil Engineering in plant construction business	Lecture	1	Master	3	116
AB.ma	25_BOP1VO_E	Balance of plant	Lecture	1	Master	3	117
AB.ma	25_CRL1VO_E	International contract law	Lecture	1	Master	2,5	118
AB.ma	25_CRM3IL_E	Contract / Risk Management	Integrated course	3	Master	3	119
AB.ma	25_DCO3IL_E	Digital Construction (BIM)	Integrated course	3	Master	1,5	121
AB.ma	25_KFK1UE_E	Intercultural Communication	Practice-oriented session	1	Master	2	122
AB.ma	25_MPC3UE_E	Management of project crisis	Practice-oriented session	3	Master	2	123
AB.ma	25_MUI3ILV_E	Erection of Plants/Site Management	Integrated course	3	Master	4	124
AB.ma	25_NES1IL_E	Sustainable Energy Systems	Integrated course	1	Master	3	126
AB.ma	25_NES1UE_E	Sustainable Energy Systems	Seminar	1	Master	1,5	128
AB.ma	25_RPF1VO_E	Accounting and Project financing	Lecture	1	Master	2,5	130
AB.ma	25_SWT1IL_E	Welding technology	Integrated course	1	Master	3	131

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Plant Construction Management (Master, Wels Campus)							
AB.ma	25_TTL3IL_E	Technical procurement, Transport and logistics	Integrated course	3	Master	3	132
AB.ma	25_VPR3IL_E	Sales & pre-project phase	Integrated course	3	Master	1,5	133
Automotive Mechatronics and Management (Master, Wels Campus)							
AMM.ma	20_AIT1VO	Automotive IT Systems 1	Lecture	1	Master	2	134
AMM.ma	20_AIT3IL	Automotive IT Systems 3	Integrated course	3	Master	1	135
AMM.ma	20_CTM1VO	Current Topics in Mobility	Lecture	1	Master	1	136
AMM.ma	20_EBD2IL	Entrepreneurship and New Business Development	Integrated course	3	Master	3	137
AMM.ma	20_INM1IL	Innovation Management	Integrated course	1	Master	3	138
AMM.ma	20_LAW3VO	Business Law & Intellectual Property Rights	Lecture	3	Master	2	140
AMM.ma	20_MBE1IL	Model Based Engineering 1	Integrated course	1	Master	5	141
AMM.ma	20_MSV3IL	Mechatronic Systems Validation	Integrated course	3	Master	1	143
AMM.ma	20_NPD1IL	New Product Development	Integrated course	1	Master	3	144
AMM.ma	20_PRM1IL	Production Management	Integrated course	1	Master	3	145
AMM.ma	20_QMA1IL	Automotive Quality Management 1	Integrated course	1	Master	1	146
AMM.ma	20_SAC1IL	Sensors and Micro Actuators	Integrated course	1	Master	3	147
AMM.ma	20_VCD1IL	Vehicle Components and Driving Dynamics	Integrated course	1	Master	4	148
Civil Engineering (Master, Wels Campus)							
BI.ma	KFK1UE	English for civil engineers within cross-cultural communication (EN)	Practice-oriented session	1	Master	2,5	149
BI.ma	RES3VO	Resource-efficient Building (Elective course to be confirmed)	Lecture	3	Master	2,5	150

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Electrical Engineering (Master, Wels Campus)							
EE.ma	21_EAP1LE	Energy Automation and Protection Systems	Lecture	1	Master	1	152
EE.ma	21_ECI3LE	EMC and EMI Aspects	Lecture	3	Master	3	153
EE.ma	21_EME3LE	Energy Markets and Energy Law	Lecture	3	Master	2	154
EE.ma	21_FIN3LE	Financing	Lecture	3	Master	1	155
EE.ma	21_HEI3LE	Advanced High Voltage Engineering	Lecture	3	Master	4	156
EE.ma	21_MAT1LE	Advanced Calculus	Lecture	1	Master	5	157
EE.ma	21_MES1LE	Signal Analysis and Machine Learning	Lecture	1	Master	4	158
EE.ma	21_SSK1PR	Cross-Cultural Negotiations	Practice-oriented session	1	Master	2	159
Innovation and Product Management (Master, Wels Campus)							
IPM.ma	20_BIO3IL	Bionics	Integrated course	3	Master	1	160
IPM.ma	20_DIF3VO	Digital Factory	Lecture	3	Master	2	161
IPM.ma	20_DPT3PT	Design Project: Technical Design II	Project	3	Master	5	162
IPM.ma	20_FEC3IL	R&D Controlling	Integrated course	3	Master	1	163
IPM.ma	20_FIN3VO	Finance	Lecture	3	Master	1	164
IPM.ma	20_IMM3IL	International Marketing & Management	Integrated course	3	Master	2	165
IPM.ma	20_KFK3UE	Leadership	Practice-oriented session	3	Master	2	166
IPM.ma	20_KZE3PT	Short-Term Design Project	Project	3	Master	2	167
IPM.ma	20_MRI3IL	Customer Integration in NPD	Integrated course	3	Master	2	168
IPM.ma	20_REG3IL	Reverse Engineering	Integrated course	3	Master	1,2	169

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Innovation and Product Management (Master, Wels Campus)							
IPM.ma	20_SCM3IL	Supply Chain Management	Integrated course	3	Master	1	170
IPM.ma	20_SIE3IL	Simultaneous Engineering	Integrated course	3	Master	2	171
IPM.ma	20_ZTA3IL	Technology Assessment	Integrated course	3	Master	1	172
IPM.ma	25_BWL1IL	Business Administration/Accounting	Integrated course	1	Master	2	173
IPM.ma	25_DPE1IL	Digital Product Development	Integrated course	1	Master	2	174
IPM.ma	25_EGD1IL	Design Visualization and Presentation I	Integrated course	1	Master	2	175
IPM.ma	25_EGD1SE	Design Visualization and Presentation I	Seminar	1	Master	2	176
IPM.ma	25_ENG1UE	English	Practice-oriented session	1	Master	2	177
IPM.ma	25_IND1IL	Design Fundamentals	Integrated course	1	Master	2	178
IPM.ma	25_INO1IL	Innovation Management	Integrated course	1	Master	4	179
IPM.ma	25_MAK1IL	Marketing Management (including MR)	Integrated course	1	Master	3	180
IPM.ma	25_MEC1IL	Mechatronics	Integrated course	1	Master	7	182
IPM.ma	25_PM1IL	Product Management	Integrated course	1	Master	3	183
IPM.ma	25_PRM1VO	Project Management	Lecture	1	Master	1	184
IPM.ma	25_SKK1UE	Presentation	Practice-oriented session	1	Master	2	185
IPM.ma	25_WIA1IL	Scientific Working	Integrated course	1	Master	1	186
Lightweight Construction and Composite Materials (Master, Wels Campus)							
LCW.ma	21_APR1PT	Project Work I	Project	1	Master	9	187
LCW.ma	21_APR3PT	Project Work III	Project	3	Master	12	188

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Lightweight Construction and Composite Materials (Master, Wels Campus)							
LCW.ma	21_KMK1UE	Solid Mechanics	Practice-oriented session	1	Master	2	189
LCW.ma	21_KMK1VO	Solid Mechanics	Lecture	1	Master	4	190
LCW.ma	21_PDF1IL	Selected Chapters Digital Factory	Integrated course	1	Master	3	191
Mechanical Engineering (Master, Wels Campus)							
MB.ma	22_MFK1UE	Solid Mechanics	Practice-oriented session	1	Master	2	192
MB.ma	22_MFK1VO	Solid Mechanics	Lecture	1	Master	4	193
MB.ma	22_MKS1VO	Multibody Dynamics	Lecture	1	Master	4	194
MB.ma	22_PRO3PT	R&D Project	Project	3	Master	10	195
MB.ma	23_DYN1IL_Inc	Dynamics	Integrated course	1	Master	3	196
MB.ma	23_MOM2IL_Inc	Mechanics of Materials	Integrated course	1	Master	3	197
Sustainable Energy Systems (Master, Wels Campus)							
SES.ma	24_AHB3LE	Applications of Hydrogen and Battery Technologies	Lecture	3	Master	5	198
SES.ma	24_ENM3IC	Energy Meteorology	Integrated course	3	Master	2,5	199
SES.ma	24_FIN3IC	Financing	Integrated course	3	Master	2,5	200
SES.ma	24_ORE3IC	Operations Research for Energy Systems	Integrated course	3	Master	2,5	201
SES.ma	24_SAH3IC	Safety Aspects of Hydrogen and Batteries	Integrated course	3	Master	4	202
SES.ma	24_SOL1LE	Solar Energy	Lecture	1	Master	2,5	203
SES.ma	24_SUS1IC	Sustainable Development	Integrated course	1	Master	2,5	204
SES.ma	24_WIN1LE	Wind Energy	Lecture	1	Master	2,5	205

Programme (department)	Course unit code	Course unit title	Course type	Semester (level)	Level	ECTS	Page
Materials and Process Engineering (Master, Wels Campus)							
WFT.ma	PRJ1PT_20	Project Work 1	Project	1	Master	13	206
WFT.ma	PRJ3PT_20	Project Work 3	Project	3	Master	13	207

Lecture/Seminar profile:

Agricultural technology I: Basics of agricultural production (23_AGR1IL_ENG)

Degree course	AGR.ba
Course title	Agricultural technology I: Basics of agricultural production
Course code	23_AGR1IL_ENG
Level	Bachelor
Term	WS25/26
Lecturer	Claudia Probst
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
By the end of this course, you should be able to:
1. Understand the fundamental principles of agricultural production.
2. Identify different types of crops and their classifications.
3. Recognize the various stages of crop production.
4. Understand the role of technology in modern agriculture

Content:
The course will cover the following topics:

1. Introduction to Agriculture: Definition and importance of agriculture. Historical development and the Green Revolution.
2. Major Crops: Biology of food crops with focus on wheat and maize.
3. Crop development: Developmental stages of crop development

Prerequisites:
1.A basic understanding of biology and environmental science.
2.Interest in agriculture and food production.

Lecture/Seminar profile:

Industrial Image Processing (23_IBV5LB)

Degree course	AT.ba
Course title	Industrial Image Processing
Course code	23_IBV5LB
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Laboratory session
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

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

Prerequisites:
n.a.

Lecture/Seminar profile:

Industrial Image Processing (23_IBV5VO)

Degree course	AT.ba
Course title	Industrial Image Processing
Course code	23_IBV5VO
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

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

Prerequisites:
n.a.

Lecture/Seminar profile:

Sociology & Building Ethics (20_SBE5SE)

Degree course	BI.ba
Course title	Sociology & Building Ethics
Course code	20_SBE5SE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	1
ECTS credits	1,5
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
The seminar is using built environment examples to analyse parameters of user acceptance in respect to sociological, ethical and design aspects. Furthermore, sustainable material use, aspects of circular economy and design decisions will be investigated.

Prerequisites:
n.a.

Lecture/Seminar profile:

Conflict Management & Mediation (20_SKK3UE)

Degree course	BI.ba
Course title	Conflict Management & Mediation
Course code	20_SKK3UE
Level	Bachelor
Term	WS25/26
Lecturer	Siegfried Lachmair
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:
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:

Biochemistry (23_BCH3LB)

Degree course	BUT.ba
Course title	Biochemistry
Course code	23_BCH3LB
Level	Bachelor
Term	WS25/26
Lecturer	Klaus Krennhuber, Robert Burgholzer
Contact hours per week	2
ECTS credits	3
Course type	Laboratory session
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	3

Learning objectives:
Graduates are able to deal with current issues in research-orientated or industrial biotechnology. They
can apply this knowledge to understand biochemical processes and to optimise naturally occurring metabolic reactions in biotechnological processes.

Graduates are able to extract proteins from biological samples in order to quantify them. Furthermore, they can develop, conduct and statistically correctly analyse experiments to investigate enzyme activity and specificity
analyse them statistically correctly.

Content:
- Extraction of proteins and enzymes;
- Protein purification and protein refolding;
- determination of biochemical parameters, e.g. enzyme activity and specificity;
- different protein determination methods;
- statistical data analysis (F-test, significance level, confidence interval).

Prerequisites:
Chemistry 1 and 2

Lecture/Seminar profile:

Business Administration (21_BUS5LE)

Degree course	EE.ba
Course title	Business Administration
Course code	21_BUS5LE
Level	Bachelor
Term	WS25/26
Lecturer	Florian Wesz
Contact hours per week	2
ECTS credits	2
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	4

Learning objectives:
Students gain a general overview of business economics. They have an idea of how to read and interpret financial statements, calculate cost rates and cost estimates.
They are able to calculate contribution margins and apply the results to various business decisions (such as break-even point, product line decisions, make-or-buy decisions, ...).
They have the basic knowledge to carry out elementary cost planning and target/actual comparisons.

Content:
• Introduction to business economics
• Legal form of companies
• Formation of companies
• Bankruptcy
• Core processes of a company
• Accounting and balancing
• Fundamentals of costing (cost distribution sheet, calculation)
• Profitability calculation
• Investment calculation
• Based on examples out of the field electrical engineering, such as service costs of facilities.

Please note: Attending the lecture is only possible, if a student is also attending the skills practice

Prerequisites:
Please note: Attending the lecture is only possible, if a student is also attending the skills practice

Lecture/Seminar profile:

Business Administration (21_BUS5PR)

Degree course	EE.ba
Course title	Business Administration
Course code	21_BUS5PR
Level	Bachelor
Term	WS25/26
Lecturer	Florian Wesz
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	4

Learning objectives:
See BUS5LE Lecture

Content:
See BUS5LE Lecture

Prerequisites:
Please note: Attending the lecture is only possible, if a student is also attending the skills practice

Lecture/Seminar profile:

Control Engineering (21_CEN5LB)

Degree course	EE.ba
Course title	Control Engineering
Course code	21_CEN5LB
Level	Bachelor
Term	WS25/26
Lecturer	Simon Mayr
Contact hours per week	2
ECTS credits	3
Course type	Laboratory session
Examinations	continuous assessment
Language of instruction	English
Places for international students	4

Learning objectives:
See CEN5LE Lecture

Content:
See CEN5LE Lecture

Prerequisites:
EEN 1-2, EMA 1-2, PRG, GEN, MAT 1-2, PHY, MES, CES (Prerequisites: Minimum 10 ECTS credits required in Electrical Engineering)

Lecture/Seminar profile:

Control Engineering (21_CEN5LE)

Degree course	EE.ba
Course title	Control Engineering
Course code	21_CEN5LE
Level	Bachelor
Term	WS25/26
Lecturer	Rastko Zivanovic
Contact hours per week	3
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
Students learn fundamentals of modern control systems with special respect to electrical energy supply and drives control.
They are able to develop / dimensioning control solutions for applications mentioned above.
Students are able to choose the right controller and tune it for a stable and fast controlling behavior.
They are able to identify and model the controlled system.
Students are able to realize controls by means of data acquisition systems and scientific computer software (such as MATLAB and MATLAB SIMULINK).

Content:
Fundamental control and steering concepts
State space models
Meaning of characteristic terms such as
- control loop
- steady state deviation

Identification of the controlled system and modeling
Controller design
Stability assessment e.g.
- graphical (locus) methods
- mathematical methods

Special applications
- electrical cars and drives
- power control in energy systems (p(u), q(u))
- grid stability

Analog and digital controllers
Application of a data acquisition software

Prerequisites:

EEN 1-2, EMA 1-2, PRG, GEN, MAT 1-2, PHY, MES, CES (Prerequisites: Minimum 10 ECTS credits required in Electrical Engineering)

Lecture/Seminar profile:

Circuit Analysis (21_EEN1LE)

Degree course	EE.ba
Course title	Circuit Analysis
Course code	21_EEN1LE
Level	Bachelor
Term	WS25/26
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:
The students know the basics of electrical engineering, starting with the basic physical quantities and correlations and SI units. They master the application of calculation methods and simulation methods on practical examples of direct, alternating and three-phase current technology, as well as for electric and magnetic fields (capacitance, inductance). They are able to independently build circuits, carry out measurements of typical parameters and evaluate these in comparison with calculation and simulation results.

Content:
Representation of physical quantities, SI units, basic quantities in the electric or magnetic field (capacitance, inductance), direct current technology, resistor networks, Kirchhoff's laws, network calculation, equivalent voltage/replacement current source, time-varying quantities, types of time-varying currents and voltages, representation of time-varying quantities. Characteristics of time varying quantities, passive components, general relationships of current, voltage, energy, power on passive components with arbitrary time varying quantities. Alternating current technology, basics of complex alternating current technology, complex calculation, network calculation, reactive power compensation, oscillating circuits, three-phase current technology, floor diagram.

Prerequisites:
Physics skills on higher education entrance qualification and Mathematics basics at secondary school level

Lecture/Seminar profile:

Circuit Analysis (21_EEN1PR)

Degree course	EE.ba
Course title	Circuit Analysis
Course code	21_EEN1PR
Level	Bachelor
Term	WS25/26
Lecturer	Sako Wanesian
Contact hours per week	2
ECTS credits	3
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
See EEN1LE Lecture

Content:
Calculation of resistance, impedance, DC networks and AC networks. Calculation of simple electromagnetic fields and their effects.

Prerequisites:
Physics skills on higher education entrance qualification and Mathematics basics at secondary school level

Lecture/Seminar profile:

Electromagnetic Fields (21_EEN3LE)

Degree course	EE.ba
Course title	Electromagnetic Fields
Course code	21_EEN3LE
Level	Bachelor
Term	WS25/26
Lecturer	Rastko Zivanovic
Contact hours per week	3
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
Load flow and system calculation with special respect to distributed systems, transient situations, unbalanced loads, unsymmetrical loads.
Fundamentals of the electromagnetic field.
Special electromagnetic fields with simple boundary conditions.
Special effects of the electromagnetic fields (e.g. skin effect, wave propagation).
Knowing and applying calculation methods for the problems listed above.

Content:
Load flow calculation with matrices
Load system feedback
Transient system transitions
• Switching processes
• Short circuit case
Unbalanced loads
• Zero sequence system
• Positive sequence system
• Negative sequence system
Electromagnetically fields for simple geometries
• Magnetically fields
  o Governing units
  o Material effects
  o Induction
  o Inductance
  o Simple computational methods
• Electrically fields

  o Governing units
  o Material effects
  o Influencing charges
  o Capacity
  o Simple computational methods
• Electrical flux fields
  o Governing units
  o Material effects
  o Influencing charges
  o Resistance
  o Simple computational methods

Special aspects of electro magnetically fields

• Skin effect
• Wave propagation
• Screening of EMC with special respect to slow and fast fields

In general: aspects of computation of force, power, and energy for electro magnetically fields

Prerequisites:

EEN 1-2, MAT 1-2

Lecture/Seminar profile:

Electromagnetic Fields (21_EEN3PR)

Degree course	EE.ba
Course title	Electromagnetic Fields
Course code	21_EEN3PR
Level	Bachelor
Term	WS25/26
Lecturer	Rastko Zivanovic
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
See EEN3LE Lecture

Content:
See EEN3LE Lecture

Prerequisites:
EEN 1-2, MAT 1-2

Lecture/Seminar profile:

Power System Analysis (21_EPG5LB)

Degree course	EE.ba
Course title	Power System Analysis
Course code	21_EPG5LB
Level	Bachelor
Term	WS25/26
Lecturer	Rastko Zivanovic
Contact hours per week	2
ECTS credits	2
Course type	Laboratory session
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
See EPG5LE Lecture

Content:
See EPG5LE Lecture

Prerequisites:
CEN, EEN 1-2, EMA 1-2, PRG, GEN, MAT 1-2, MES, CES, HVE

Lecture/Seminar profile:

Electrical Power Grids and Systems (21_EPG5LE)

Degree course	EE.ba
Course title	Electrical Power Grids and Systems
Course code	21_EPG5LE
Level	Bachelor
Term	WS25/26
Lecturer	Walter Tenschert
Contact hours per week	4
ECTS credits	5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
Students know the operational and maintenance aspect of modern power grids with special respect to smart grid technology.
They know about protection measures with respect to failures.
Students get a rough overview on IT security aspects.
They know how the load flow and power quality can be controlled or influenced with respect to generation, demand and specific time frames.
Students know the effect of disadvantageous impacts like unbalanced systems, harmonics and bad power factors.
They know economical effects with respect to operational strategies, safety (IT and protection), maintenance, and implementation of smart grid technology.
Energy efficiency aspects are known.

Content:
- Fundamentals of electrical power supply
- Voltage levels for electrical power supply and their purpose
- Topologies of electrical grids and parts of the grids (like substations)
- Control of the load flow and power quality in electrical grids and electrical power supply with special respect to e.g.
    - time frame
    - power factor
    - harmonics
    - switching activities
- Smart grid systems and technology
- Special operational situations e.g.
    - short circuit

- switching
- synchronization

-Special aspects neutral point connection
- Protection concepts e.g.
  - overvoltage, insulation coordination
  - earth fault current
  - short circuit
- Availability with special respect to maintenance and state dependent maintenance concepts
- Monitoring and diagnostic applications
- Safety in electrical systems and apparatus
  - electrical shock
  - vandalism
  - hacking
- Economical and ecological considerations

Please note: Attending the lecture is only possible, if a student is also attending the skills practice.

Prerequisites:
CEN, EEN 1-2, EMA 1-2, PRG, GEN, MAT 1-2, MES, CES, HVE

Lecture/Seminar profile:

Power System Analysis (21_EPG5PR)

Degree course	EE.ba
Course title	Power System Analysis
Course code	21_EPG5PR
Level	Bachelor
Term	WS25/26
Lecturer	Rastko Zivanovic
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:
See EPG5LE Lecture

Content:
See EPG5LE Lecture

Note: Attending the skills practice is only possible, if a student also attends the lecture.

Prerequisites:
CEN, EEN 1-2, EMA 1-2, PRG, GEN, MAT 1-2, MES, CES, HVE

Lecture/Seminar profile:

Powerplants for Electrical Power Generation (21_GEN1IC)

Degree course	EE.ba
Course title	Powerplants for Electrical Power Generation
Course code	21_GEN1IC
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	3
ECTS credits	3
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
The students
• understand the fundamental principles of the methods to generate, distribute and store electricity on an encyclopedic level.
• are familiar with physical-, chemical-, hydraulic- and thermodynamic processes and able to estimate power and energy yield under specific conditions.
• know typical topologies of power plants.
• understand aspects like available resources, waste treatment and economy of the operation, challenges, advantages / disadvantages and risks should be considered.
• are able to communicate with experts for the design and operation of power plants and electrical power systems.
• have knowledge about the electrical energy situation and technologies used in this field in their home country and can compare it with other countries.
• are able to communicate with experts for the design and operation of power plants.

Content:
• Physical basics
  - power , energy, …
  - calculations and estimates
• Power plants / technologies / physics / applications
  - hydro
  - wind
  - solar
  - fossil
  - nuclear
  - other resources (e.g. wave energy, geothermal, …)

• Storage
  - technologies
  - areas of applications
• Usage and distribution of electrical energy
  - general technologies
  - grid technologies
• Basic economic and political considerations with respect to
  - operational conditions
  - operational planning
  - liberalized markets
• Resources
  - utilisation
  - costs
  - waste treatment
• Specific examples of electrical power systems
  - new developments
  - electrical energy situation in a specific country
  - new technologies and future possible applications

Prerequisites:

MAT 1, EEN 1, Physics skills on higher education entrance qualification

Lecture/Seminar profile:

Information Technology (21_INF1LE)

Degree course	EE.ba
Course title	Information Technology
Course code	21_INF1LE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	1
ECTS credits	2
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
The students
• know and can professionally use the essential elements of a modern computer-aided engineering workplace: workplace computer, current interfaces, operating system, network (especially Internet and WLAN).
• have an understanding of how a computer works and how tasks are prepared (structured) for computer processing (flowcharts, data models)
• have basic understanding of data and their structure as well as application of databases in companies
• learn the basic elements of programming languages of an object-oriented high-level language.
• understand the necessity of IT security in companies and on the Internet as well as the legal basis behind it.
• know standard software tools commonly used in technology as well as the basic process of software development

Content:
• History of computer science, terms of computer science
• Basics of hardware, software, networks and security
• Understanding of simple algorithms and data structures
• Programming basics - variables, control structures,
• First introduction to software engineering
• Organization of data
• Awareness of IT security and IT law
• Creation of professional documents according to scientific publication templates
• Creation of simple procedural programs
• Creation of simple calculations as well as diagrams for the visualization of data with standard

software

Prerequisites:
INF1, knowledge in the field of information technology

Lecture/Seminar profile:

Information Technology (21_INF1PR)

Degree course	EE.ba
Course title	Information Technology
Course code	21_INF1PR
Level	Bachelor
Term	WS25/26
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	3

Learning objectives:
See INF1LE Lecture

Content:
See INF1LE Lecture

Prerequisites:
INF1, knowledge in the field of information technology

Lecture/Seminar profile:

Mathematics 1 (21_MAT1LE)

Degree course	EE.ba
Course title	Mathematics 1
Course code	21_MAT1LE
Level	Bachelor
Term	WS25/26
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	3

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:
Sets, statements, numbers: Set theory, propositional logic, switching algebra, real numbers, magnitude, summation signs, inequalities combinatorics, place value systems, complex numbers (introduction).

Vector calculus: vector calculus in plane and space, scalar product, orthogonal projection, vectorial product, analytic geometry (straight line, plane), applications of vector calculus in engineering.

Matrices and linear systems of equations: sum and product of matrices, inverse matrix, determinant of a matrix, solving and solution structure of linear systems of equations.

Functions and curves: bijectivity and inverse function, polynomial functions, rational functions, limits of sequences and functions, trigonometric functions, exponential and logarithmic functions, hyperbolic functions, continuity, complex numbers (exponential form, exponentiation, root extraction), parameter representation of curves, oscillations.

Differential calculus: derivative of a function, derivative rules, higher derivatives, Newton's approximation method, rule of de l'Hospital, maxima/minima/turn points, curve discussions, extreme value problems, Taylor polynomials, differential geometry.

Mathematics software: introduction to a computer algebra system and use of the program in the

above chapters.

Please note: Attending the lecture is only possible, if a student also attends the skills practice class!

Prerequisites:
Mathematics fundamentals at secondary school level

Lecture/Seminar profile:

Mathematics 1 (21_MAT1PR)

Degree course	EE.ba
Course title	Mathematics 1
Course code	21_MAT1PR
Level	Bachelor
Term	WS25/26
Lecturer	Harald Hinterleitner
Contact hours per week	2
ECTS credits	2,5
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
See MAT1LE Lecture

Content:
See MAT1LE Lecture

Prerequisites:
Mathematics fundamentals at secondary school level

Lecture/Seminar profile:

Measurement Engineering for Electrical Energy Systems (21_MES3LE)

Degree course	EE.ba
Course title	Measurement Engineering for Electrical Energy Systems
Course code	21_MES3LE
Level	Bachelor
Term	WS25/26
Lecturer	Franz Auinger
Contact hours per week	2
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
Students know fundamentals of measurement engineering e.g.
• definition of measurement
• measurement procedures
• error types
• sensor integration concepts (like active and passive sensors, data transfer)
• data acquisition
They know the essential sensors, measuring techniques, and measuring circuits for electrical energy engineering e.g.
• electromagnetic parameter
• temperature
• force, pressure
• flow mechanics
• sound, noise
with special respect to robustness, costs, frequency response, and spatial resolution.
Students know topology and screening effects on EMC and EMI, rsp.
They are able to design EMC robust measurement circuits.

Content:
Fundamentals of measuring techniques
 definition of measurement
 measurement procedures
 measuring error
    o types of errors and measures
 data acquisition
 active passive sensor concepts

 data integration
 concepts of monitoring and diagnostics with respect to condition based maintenance
Essential sensors, measuring techniques, and measuring circuits for electrical energy engineering
e.g.
 electromagnetic parameter (with special respect to electrical energy engineering)
 temperature
 force, pressure
 flow mechanics
 sound, noise
 ...
with special respect to robustness, costs, frequency response, and resolution
Topology and screening effects with respect to EMC and EMI, rsp.
Design of EMC robust measurement circuits
Data acquisition systems and measurement system design of these systems
Applying of a data acquisition system (e.g. NI LabView)

Prerequisites:
EEN 1-3, EMA 1, PRG, GEN, MAT 1-2

Lecture/Seminar profile:

Project Management (21_PRM3IC)

Degree course	EE.ba
Course title	Project Management
Course code	21_PRM3IC
Level	Bachelor
Term	WS25/26
Lecturer	David Schmidtbauer
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:
The students understand the sense of projects and the goals and tools for any efficient project management in the sense of the International Competence Baseline
They know the tools and methods for project management for project planning, project control, and project documentation
Students know team dynamic principles
They know the essential project risks and methods to minimize or to act against them
Students have basic knowledge of the function and application of software tools for any project management.

Content:
Project management as business process
• project manual
• methods to manage projects
  o methods for the project start
    - project framework and context
    - design of the project organization
    - project planning
  o project coordination
  o project controlling
  o project marketing
  o project crises
  o project end
• Survey on project based organizations
Project management software tools for the items mentioned above.

Prerequisites:
No prerequisits required

Lecture/Seminar profile:

Communication with intercultural aspects (21_SSK1SE)

Degree course	EE.ba
Course title	Communication with intercultural aspects
Course code	21_SSK1SE
Level	Bachelor
Term	WS25/26
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 have constructive and solution orientated conversations with different communication partners (colleagues, internal and external clients).

They are aware of their own cultural background and can reflect about cultural differences in their multi-national classroom setting.

They can successfully communicate with people from many different countries and know tools to continue developing their own intercultural competence.

Content:
Communication theory basics (e.g. Paul Watzlawick, Schulz von Thun).
Significance of perception within communication (e.g. perception filters, canals, distortion).
Basics of intercultural communication and development of intercultural key competences. Reflection of personal cultural identity, social roles and behavior patterns and expectations.
Guide lines for constructive feedback;
Development of a team spirit in the group.
Defining rules and needs for a successful collaboration in the team.

Prerequisites:
No prerequisites required

Lecture/Seminar profile:

German Language A 1.1 (DAF_A1.1_UE)

Degree course	FWE
Course title	German Language A 1.1
Course code	DAF_A1.1_UE
Level	Bachelor
Term	WS25/26
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	60

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 2.1 (DAF_A2.1_UE)

Degree course	FWE
Course title	German Language A 2.1
Course code	DAF_A2.1_UE
Level	Bachelor
Term	WS25/26
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	30

Learning objectives:
n.a.

Content:
Topics and Grammar:
1. Getting to know each other, travel experiences, family tree, talking about your family, accommodation / subordinating conjunction: weil, Perfect Tense of separable and inseparable verbs, genitive with names, von, bei.
2. At home: addresses, locations, conversations with neighbours, two-case prepositions and verbs with them, directional adverbs: rein, raus, runter…
3. Guten Appetit!: breakfast, in a restaurant, private invitations / nominative and accusative indefinite pronouns
4. The World of Work: giving advice, expressing conditions, telephone conversations at work, characteristics for different careers /Subjunctive: sollte, conjunction wenn
5. Sport: health tips, expressing feelings, telephone enquiries / reflexive verbs, verb + preposition, question-words with prepostions
6. Education and Career: describing your career path, expressing opinion, describing and discussing school systems, further and higher education, interviews / Simple Past of modal verbs, conjunction: ‚dass…
7. Celebrations and Presents: presents, vouchers, weddings, planning a celebration / Dative object, position of objects

Lehrbuch: Schritte International 3, Niebisch, Hueber Verlag

Prerequisites:

n.a.

Lecture/Seminar profile:

German Language B 1.1 (DAF_B1.1_UE)

Degree course	FWE
Course title	German Language B 1.1
Course code	DAF_B1.1_UE
Level	Bachelor
Term	WS25/26
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	30

Learning objectives:
n.a.

Content:
Topics and Grammar:
1. Happiness in Everyday Life: reporting the past, newspaper reports / Conjunction: als, Irregular verbs past tense, Pluperfect tense.
2. Entertainment: Star Wars. Describing people and things, expressing contrast. Television. Grammar: subordinating conjunction obwohl, relative pronouns and sentences, adverbs of degree: ziemlich…
3. Keeping fit: Relaxation Exercises. Advice and Recommendations. At the Doctor. Health. Genitive, Present Passive Voice. Present Passive with Modal verb müssen
4. Languages: Subjunctive. Not understandiing something. Justification. Understanding a literary text. Conjunction wenn. Preposition wegen. Conjunctions: darum, deswegen etc.
5. Career, Job and Internship: Teamwork, Business Ideas, Written job applications, telephone applications. Infinitive with zu: Ich habe keine Lust, Ärger zu bekommen. Nicht/nur brauchen+infinitive mit zu.
6. Customer Wishes: speaking about holiday/vacation wishes and statistics. Good intentions. Holiday/vacation destinations. Dream Holiday/Vacation. Sales Conversations. Grammar: um…zu+infinitive, Conjunction: damit. statt…zu, ohne…zu…Expressions with Es…
7. Our Home: The Dream Flat/Apartment. Neijghbours. Weekend Relationships. Grammar: two-part conjunctions: nicht nur…sondern auch; entweder….oder etc. Subjunctive: Hätte ich…Verbs with prepositions (e.g. warten auf…), Preposition trotz

Lehrbuch: Schritte International, Niebisch, Hueber Verlag

Prerequisites:
n.a.

Lecture/Seminar profile:

German Language B 2.1 (DAF_B2.1_UE)

Degree course	FWE
Course title	German Language B 2.1
Course code	DAF_B2.1_UE
Level	Bachelor
Term	WS25/26
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	20

Learning objectives:
n.a.

Content:
Topics:

Menschen/Sprache/Orte/Konsum/Zukunft

Grammar: Adjectives, verbs, the sentence, Reporting the Past and Negation, Subjunctive II

Lehrbuch: EM neu Hauptkurs Niveaustufe B2, Hueber

Prerequisites:
n.a.

Lecture/Seminar profile:

German Language C 1.1 (DAF_C1.1_UE)

Degree course	FWE
Course title	German Language C 1.1
Course code	DAF_C1.1_UE
Level	Bachelor
Term	WS25/26
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	10

Learning objectives:
n.a.

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

1.Types of word, completing statements, curiosities, forms of indirect speech, verbs of speaking, prepositions, clauses with wie, types of text, keywords in texts, reading strategies, daily newspapers
2. The bank, cost of living, bank business, two-part conjunctions, modal particles in questions and statements, meaning of modal particles, composites, formal and informal letters
3. Adjectives, describing photos, giving a short lecture, suffixes of adjectives, constructing adjectives, correcting mistakes, adjectives of character, adjectives with pre-and suffixes, composite adjectives, word-building with adjectives, article and adjective endings, problem-solving
4. Idioms and Expressions, rules of behaviour when invited somewhere, formal letters, saying du or Sie, es as a pronoun, use of es in speech, advanced verbs, verbs of speech.
5. Vivid idioms, describing photos, prefixes ent-, miss-, zer-, genitive, listening strategies, terminology, idioms with Herz, Geist, Seele, Verstand

Prerequisites:
n.a.

Lecture/Seminar profile:

German Language C2.1 (DAF_C2.1_UE)

Degree course	FWE
Course title	German Language C2.1
Course code	DAF_C2.1_UE
Level	Bachelor
Term	WS25/26
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	10

Learning objectives:
n.a.

Content:
n.a.

Prerequisites:
n.a.

Lecture/Seminar profile:

English V (22_ENG5UE)

Degree course	IPEM.ba
Course title	English V
Course code	22_ENG5UE
Level	Bachelor
Term	WS25/26
Lecturer	Julia Stoiber
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:
Project Management:
practice of project management activities in English (e.g. discussion/negotiation of schedule, budget, sequencing of activities etc.)
Presentation/explanation by students of topics from the Semester 5 curriculum
Reading and discussion of articles on topics relevant/related to subjects of the curriculum/field of study
Reading and discussion of articles of general topical interest and/or theme-based articles
Grammar revision as required

Prerequisites:
n.a.

Lecture/Seminar profile:

Digital Marketing (24_DMA3UE)

Degree course	IPEM.ba
Course title	Digital Marketing
Course code	24_DMA3UE
Level	Bachelor
Term	WS25/26
Lecturer	Anne Hadler
Contact hours per week	1
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

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

Prerequisites:
n.a.

Lecture/Seminar profile:

Electrical Engineering II (24_ETE3IL)

Degree course	IPEM.ba
Course title	Electrical Engineering II
Course code	24_ETE3IL
Level	Bachelor
Term	WS25/26
Lecturer	Roland Exler
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:
Basics of the electrical and magnetic fields (induction, energy and forces, ...), three-phase technology, functions and characteristics of electrical machines: DC machine, transformer, asynchronous machine, synchronous machine, transient compensation processes, Basis in the electronics, Basics electronic components (diode, transistor, power semiconductor, OPV, digital technology ...).
Computational and laboratory exercises with practical examples to the contents.

Prerequisites:
n.a.

Lecture/Seminar profile:

Electrical Engineering II (24_ETE3LB)

Degree course	IPEM.ba
Course title	Electrical Engineering II
Course code	24_ETE3LB
Level	Bachelor
Term	WS25/26
Lecturer	Roland Exler
Contact hours per week	1
ECTS credits	2,5
Course type	Laboratory session
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Basics of the electrical and magnetic fields (induction, energy and forces, ...), three-phase technology, functions and characteristics of electrical machines: DC machine, transformer, asynchronous machine, synchronous machine, transient compensation processes, Basis in the electronics, Basics electronic components (diode, transistor, power semiconductor, OPV, digital technology ...).
Computational and laboratory exercises with practical examples to the contents.

Prerequisites:
n.a.

Lecture/Seminar profile:

Basis, Visualization and Model making (24_GVM3UE)

Degree course	IPEM.ba
Course title	Basis, Visualization and Model making
Course code	24_GVM3UE
Level	Bachelor
Term	WS25/26
Lecturer	Michael Schwidefsky
Contact hours per week	1
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Perception and aesthetics
2D design and presentation techniques:
Sketching, Rendering
Basics of software packages Photoshop and Illustrator
3D- Presentation techniques: Hardware-Model making methods

Prerequisites:
n.a.

Lecture/Seminar profile:

Visualization and Model Building Fundamentals (24_GVM3VO)

Degree course	IPEM.ba
Course title	Visualization and Model Building Fundamentals
Course code	24_GVM3VO
Level	Bachelor
Term	WS25/26
Lecturer	Michael Schwidefsky
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:
Perception and aesthetics
2D design and presentation techniques:
Sketching, Rendering
Basics of software packages Photoshop and Illustrator
3D- Presentation techniques: Hardware-Model making methods

Prerequisites:
n.a.

Lecture/Seminar profile:

Technology & Innovationsmanagement II (24_INO3IL)

Degree course	IPEM.ba
Course title	Technology & Innovationsmanagement II
Course code	24_INO3IL
Level	Bachelor
Term	WS25/26
Lecturer	Christiane Rau
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:
Success factors of technology and innovation management
Organization and integration of innovation management in companies
Innovation strategy in the context of corporate and business unit strategies
Innovation processes and their application (e.g. stage-gate processes, agile and hybrid process models)
Specifics of and processes to come up with service innovations.

The content will be practically applied in the context of simulations and the work on real innovation projects.

Prerequisites:
n.a.

Lecture/Seminar profile:

Legal Foundations (24_JUS3VO)

Degree course	IPEM.ba
Course title	Legal Foundations
Course code	24_JUS3VO
Level	Bachelor
Term	WS25/26
Lecturer	Michael Stadler
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:
Fundamentals of civil law (private law, law of obligations, property law)
Commercial and corporate law
Course of administrative proceedings
Fundamentals of criminal law

Prerequisites:
n.a.

Lecture/Seminar profile:

Market Research II (24_MFO3SE)

Degree course	IPEM.ba
Course title	Market Research II
Course code	24_MFO3SE
Level	Bachelor
Term	WS25/26
Lecturer	Doris Eyett
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:
Advanced knowledge of the methods of quantitative primary research
Descriptive data analysis
Statistical test methods
Multivariate analysis methods (analysis of variance, regression analysis)
Information analysis using SPSS
Application of the knowledge in the context of a market research project (focus: quantitative research).

Prerequisites:
n.a.

Lecture/Seminar profile:

Modern User Interface Design I (24_MUI3IL)

Degree course	IPEM.ba
Course title	Modern User Interface Design I
Course code	24_MUI3IL
Level	Bachelor
Term	WS25/26
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:
Basics of designing interactive systems: see 3.4.8, 3.4.9 and 7.2.1 of the tekom competence framework°; ÖNORM EN ISO 9241 series of standards
Definition and basics of usability, criteria for usable software systems
Designing, evaluating and rejecting as a basic principle of developing interactive media
Sensitization to the sensible use of the technical possibilities of interactive media
Steps of user-centered design (analysis of the context of use, definition of requirements, conception and design, evaluation)
Familiarization with individual usability methods for context of use analysis, documentation of requirements, design of interactive systems and evaluation (e.g. observation, personas, various types of prototypes, expert reviews, user tests)
Interactive layouts, navigation, navigation models, design and presentation of content hierarchies
Usability tests - theory and practice of evaluating software and hardware systems (course-specific application, e.g. technical instructions)
Discussion of the suitability of different methods
Consolidation of skills through concrete applications
° Available from:
https://www.tekom.de/fileadmin/tekom.de/user_upload/Kompetenzrahmen_UEberblick.pdf

Translated with DeepL.com (free version)

Prerequisites:

n.a.

Lecture/Seminar profile:

Modern User Interface Design II (24_MUI3IL)

Degree course	IPEM.ba
Course title	Modern User Interface Design II
Course code	24_MUI3IL
Level	Bachelor
Term	WS25/26
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:
Usability evaluation to improve the ergonomics of interactive software systems: see 7.2.1 of the tekom competence framework°.
Background information on user tests and their implementation
Preparation of a user test: preparation of documents (e.g. task definition, questionnaire, checklists, data collection form for personal data)
Carrying out user tests using a practical example to identify sources of error
Test evaluation and documentation of potential improvements
Available from:
https://www.tekom.de/fileadmin/tekom.de/user_upload/Kompetenzrahmen_UEberblick.pdf

Translated with DeepL.com (free version)

Prerequisites:
n.a.

Lecture/Seminar profile:

Product Management (24_PMT3IL)

Degree course	IPEM.ba
Course title	Product Management
Course code	24_PMT3IL
Level	Bachelor
Term	WS25/26
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:
Typology of products and services
Tasks and basics orientation of the product management
Possibilities of organizing product management
Holistic process of product management from product strategy to product innovation to market introduction and product lifecycle management
Product-related analysis and control tools (product life cycle model, positioning models, perceptual map)
Product and positioning strategies
Aspects of launching new products
Management of established products
Basics and importance of branding and brand management in B2B brands

Prerequisites:
n.a.

Lecture/Seminar profile:

Quantitative data analysis (24_QDA3UE)

Degree course	IPEM.ba
Course title	Quantitative data analysis
Course code	24_QDA3UE
Level	Bachelor
Term	WS25/26
Lecturer	Doris Eyett
Contact hours per week	1
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Descriptive statistics: graphical representation of data, statistical measures.
Elementary probability: combinatorics, Laplace's probability, conditional probability, independence of events, Bayes' theorem, total probability theorem
Random variable: discrete and continuous random variable, probability (density) function, distribution function, expected value, standard deviation, variance
Important distributions: Binomial distribution, Hypergeometric distribution, Normal distribution, Poisson process (Poisson distribution, Exponential distribution) Chi-square distribution, Student’s t distribution, Weibull distribution, Gumbel distribution, Log normal distribution, Lifetime distributions, Reliability.
Estimation of parameters: method of moments, maxinum likelihood estimator.
Test theory: Z-test and T-test for one and two populations, control charts, chi-square scatter test, probability test, non-parametric tests (Mann-Whitney, etc.)

Prerequisites:
n.a.

Lecture/Seminar profile:

Quantitative Data Analysis (24_QDA3VO)

Degree course	IPEM.ba
Course title	Quantitative Data Analysis
Course code	24_QDA3VO
Level	Bachelor
Term	WS25/26
Lecturer	Doris Eyett
Contact hours per week	2
ECTS credits	2,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Descriptive statistics: graphical representation of data, statistical measures.
Elementary probability: combinatorics, Laplace's probability, conditional probability, independence of events, Bayes' theorem, total probability theorem
Random variable: discrete and continuous random variable, probability (density) function, distribution function, expected value, standard deviation, variance
Important distributions: Binomial distribution, Hypergeometric distribution, Normal distribution, Poisson process (Poisson distribution, Exponential distribution) Chi-square distribution, Student's t distribution, Weibull distribution, Gumbel distribution, Log normal distribution, Lifetime distributions, Reliability.
Estimation of parameters: method of moments, maxinum likelihood estimator.
Test theory: Z-test and T-test for one and two populations, control charts, chi-square scatter test, probability test, non-parametric tests (Mann-Whitney, etc.)

Prerequisites:
n.a.

Lecture/Seminar profile:

Social Skills: Teamwork (24_SKK3SE)

Degree course	IPEM.ba
Course title	Social Skills: Teamwork
Course code	24_SKK3SE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
What is a team?
Advantages and disadvantages of teamwork
Advances for effective teamwork
Characteristics of teams (e.g. group cohesion, group norms, motivational characteristics, group psychological phenomena, etc.)
Phases of team development (e.g. Blanchard, Tuckman, team clock of Francis / Young, etc.)
Roles in teams (e.g. Schindler, Belbin, etc.)
Process analysis in the teamwork

Prerequisites:
n.a.

Lecture/Seminar profile:

CAD Basis (25_CAD1UE)

Degree course	IPEM.ba
Course title	CAD Basis
Course code	25_CAD1UE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	3
ECTS credits	4
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	6

Learning objectives:
n.a.

Content:
Technical communication
Application of standards
Design criteria
Presentation of spatial objects in the plane
Freehand technical drawing
  Measurements
  Section presentations
  Surface marking
  Tolerances and fits
  Form and position tolerances
  Thread representation
Turning and milling constructions
Casting constructions
Welding constructions

3D model creation
 Turning and milling constructions
 Casting constructions
2D derivation
  Dimensional drawings
  Section presentations

Surface marking
Tolerances and fits
Form and position tolerances Winning the presentation
3D assembly
e.g. welding constructions

Prerequisites:

n.a.

Lecture/Seminar profile:

Information Technology (25_INF1UE)

Degree course	IPEM.ba
Course title	Information Technology
Course code	25_INF1UE
Level	Bachelor
Term	WS25/26
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	6

Learning objectives:
n.a.

Content:
History of computer science, terms of computer science
Basics of hardware, software, networks and security
Understanding of simple algorithms and data structures
Programming basics - variables, control structures,
First introduction to software engineering
Organization of data
Awareness of IT Security and IT Law
Creation of professional documents according to scientific publication requirements
Creation of simple procedural programs
Creation of simple calculations as well as diagrams for the visualization of data with standard software

Prerequisites:
n.a.

Lecture/Seminar profile:

Information Technology (25_INF1VO)

Degree course	IPEM.ba
Course title	Information Technology
Course code	25_INF1VO
Level	Bachelor
Term	WS25/26
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:
History of computer science, terms of computer science
Basics of hardware, software, networks and security
Understanding of simple algorithms and data structures
Programming basics - variables, control structures,
First introduction to software engineering
Organization of data
Awareness of IT Security and IT Law
Creation of professional documents according to scientific publication requirements
Creation of simple procedural programs
Creation of simple calculations as well as diagrams for the visualization of data with standard software

Prerequisites:
n.a.

Lecture/Seminar profile:

Mathematics I (25_MAT1UE)

Degree course	IPEM.ba
Course title	Mathematics I
Course code	25_MAT1UE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	1
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	6

Learning objectives:
n.a.

Content:
Sets, statements, numbers: Set theory, propositional logic, switching algebra, real numbers, magnitude, summation signs, inequalities combinatorics, place value systems, complex numbers (introduction).
Vector calculus: vector calculus in plane and space, scalar product, orthogonal projection, vector product, analytic geometry (straight line, plane), applications of vector calculus in engineering.
Matrices and linear systems of equations: sum and product of matrices, inverse matrix, determinant of a matrix, solution and solution structure of linear systems of equations.
Functions and curves: bijectivity and inverse function, polynomial functions, rational functions, limits of sequences and functions, trigonometric functions, exponential and logarithmic functions, hyperbolic functions, continuity, complex numbers. (exponential form, exponentiation, root extraction), parameter presentation of curves, oscillations.
Differential calculus: derivative of a function, derivative rules, higher derivatives, Newton's approximation method, de l'Hospital's rule, maxima/minima/turn points, curve discussions, extreme value problems, Taylor polynomials, differential geometry.

Prerequisites:
n.a.

Lecture/Seminar profile:

Mathematics I (25_MAT1VO)

Degree course	IPEM.ba
Course title	Mathematics I
Course code	25_MAT1VO
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	3
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Sets, statements, numbers: Set theory, propositional logic, switching algebra, real numbers, magnitude, summation signs, inequalities combinatorics, place value systems, complex numbers (introduction).
Vector calculus: vector calculus in plane and space, scalar product, orthogonal projection, vector product, analytic geometry (straight line, plane), applications of vector calculus in engineering.
Matrices and linear systems of equations: sum and product of matrices, inverse matrix, determinant of a matrix, solution and solution structure of linear systems of equations.
Functions and curves: bijectivity and inverse function, polynomial functions, rational functions, limits of sequences and functions, trigonometric functions, exponential and logarithmic functions, hyperbolic functions, continuity, complex numbers. (exponential form, exponentiation, root extraction), parameter presentation of curves, oscillations.
Differential calculus: derivative of a function, derivative rules, higher derivatives, Newton's approximation method, de l'Hospital's rule, maxima/minima/turn points, curve discussions, extreme value problems, Taylor polynomials, differential geometry.

Prerequisites:
n.a.

Lecture/Seminar profile:

Mechanics I (25_MEC1UE)

Degree course	IPEM.ba
Course title	Mechanics I
Course code	25_MEC1UE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	1
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	6

Learning objectives:
n.a.

Content:
- Cartesian coordinate system
- Scalars and vectors
- Vector operations
- Concept of force
- Reduction of plane force systems
- Torque
- Equilibrium of a rigid body in the plane
- Free cutting of mechanical systems
- gravitational forces, frictional forces, spring forces
- Center of gravity, moment of inertia
- Internal forces on a straight beam
- Basic concepts of elastostatics, uniaxial stress state

- Calculation exercises with practical examples related to the contents of the lecture.

Prerequisites:
n.a.

Lecture/Seminar profile:

Mechanics I (25_MEC1VO)

Degree course	IPEM.ba
Course title	Mechanics I
Course code	25_MEC1VO
Level	Bachelor
Term	WS25/26
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:
Cartesian coordinate system
Scalars and Vectors
Vector operations
Concept of force
Reduction of plane force systems
Torque
Equilibrium of rigid body in the plane
Free-sliding of mechanical systems
gravitational forces, frictional forces, spring forces
center of gravity, moment of inertia
Internal forces on a straight beam
Fundamentals of elastostatics, uniaxial stress state

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

Prerequisites:
n.a.

Lecture/Seminar profile:

Market-oriented management (25_MOM1IL)

Degree course	IPEM.ba
Course title	Market-oriented management
Course code	25_MOM1IL
Level	Bachelor
Term	WS25/26
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:
Importance of market and customer orientation for the company's success
Holistic process of market-oriented management
Specifics of B2B, industrial goods and high-tech marketing
Analysis of the strategic situation, taking into account all relevant information (macro-/micro-environment, customers, competitors, companies)
Determination of the basic marketing strategy orientation (customer-centered and competitor-centered strategies)
Basics of communication, price, distribution, sales and product policy
Basics of relationship marketing and its importance in the context of industrial goods.

Prerequisites:
n.a.

Lecture/Seminar profile:

Innovation & Product Development (25_PEW1IL)

Degree course	IPEM.ba
Course title	Innovation & Product Development
Course code	25_PEW1IL
Level	Bachelor
Term	WS25/26
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:
Importance of technological innovations
Contents and tasks of R&D, technology and innovation management
Technology and innovation management process
Overview and structure
Initiation of ideas
Idea generation

Abstraction, specification of tasks
Establishing functional criteria
Conception of solution variants
Evaluation of developed variants, selection
Concretizing design work by drawing and calculating
Computer aided Design and construction
Virtual prototyping
Inclusion of material and manufacturing technologies
Criteria of transport and maintenance
Criteria of human and environmental protection, sustainability of the product
Application of the topics discussed in the lecture on the basis of concrete tasks and case studies

Prerequisites:
n.a.

Lecture/Seminar profile:

Social Skills: Communication (25_SKK1SE)

Degree course	IPEM.ba
Course title	Social Skills: Communication
Course code	25_SKK1SE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	6

Learning objectives:
n.a.

Content:
Fundamentals of communication theory
Importance of perception in communication (e.g. perception filters, distortions, channels)
Guidelines for constructive feedback
Development of a "we-feeling" in the group
Working out group rules
Time and works organization with special consideration of learning and works strategies

Prerequisites:
n.a.

Lecture/Seminar profile:

Technical Drawing Basis (25_TEZ1IL)

Degree course	IPEM.ba
Course title	Technical Drawing Basis
Course code	25_TEZ1IL
Level	Bachelor
Term	WS25/26
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:
Technical communication
Application of standards
Design criteria
Presentation of spatial objects in the plane
Freehand technical drawing
  Measurements
  Section presentations
  Surface marking
  Tolerances and fits
  Form and position tolerances
  Thread representation
Turning and milling constructions
Casting constructions
Welding constructions

3D model creation
 Turning and milling constructions
 Casting constructions
2D derivation
  Dimensional drawings
  Section presentations

Surface marking
Tolerances and fits
Form and position tolerances Winning the presentation
3D assembly
e.g. welding constructions

Prerequisites:

n.a.

Lecture/Seminar profile:

English I (23_ENG1UE)

Degree course	LCW.ba
Course title	English I
Course code	23_ENG1UE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	1
ECTS credits	1
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Business travel language practice: e.g. „social English“, business introductions, small talk, hotels, telephoning etc.
Describing the economy, jobs, work routines, companies
Technical and business English: selected units from Technical Eng-lish, Vocabulary and Grammar
Explanation by students of topics from other subjects of the curriculum not taught in English
Explanation and discussion of Business Vocabulatory / Topics:
- Industries and types of companies
- 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 therof and vo-cabulary-building work.
General:
Intercultural Communication and Awareness: countries, peoples and their customs.
Reading and discussion of and vocabulary work on articles of general topical interest and/or based on a theme.
Communicative grammar practice: Present and Past (biographies of famous people/engineers,

industrial revolution,..), prepositions time and place, word order

Prerequisites:
n.a.

Lecture/Seminar profile:

English III (23_ENG3UE)

Degree course	LCW.ba
Course title	English III
Course code	23_ENG3UE
Level	Bachelor
Term	WS25/26
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	2

Learning objectives:
n.a.

Content:
Recognize differences between informal instructions/formal process descriptions
describe systems/processes
express themselves about innovation and state of the art
Create "general-to-specific" texts
Use linking words correctly to improve flow
Repeat and practise rules for the passive voice

Prerequisites:
n.a.

Lecture/Seminar profile:

English IV (23_ENG5UE)

Degree course	LCW.ba
Course title	English IV
Course code	23_ENG5UE
Level	Bachelor
Term	WS25/26
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	2

Learning objectives:
n.a.

Content:
The course introduces students to academic vocabulary, the New Academic Word List and provides a targeted approach to vocabulary training.
The course aims to raise students‘ understanding of academic writing, such as intended audience and purpose, and overall genre consciousness using task-based methodology. It introduces academic text patterns and covers a variety of linguistic elements to help students position themselves as junior scholars in their academic communities and aid in the writing of their bachelor thesis.

Prerequisites:
n.a.

Lecture/Seminar profile:

(23_FEM5UE)

Degree course	LCW.ba
Course title	Grundlagen Finite Element Simulation
Course code	23_FEM5UE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
Practicing the process of an FE analysis (preprocessing, job management, postprocessing) using simple examples. Use of a widely used software tool. Independent treatment of a calculation task with finite elements and creation of a calculation report

Prerequisites:
Mathematik I u. II, Mechanik I, Festigkeitslehre

Lecture/Seminar profile:

Finite element simulation - basics (23_FEM5VO)

Degree course	LCW.ba
Course title	Finite element simulation - basics
Course code	23_FEM5VO
Level	Bachelor
Term	WS25/26
Lecturer	Thomas Josef Reiter
Contact hours per week	1
ECTS credits	1
Course type	Lecture
Examinations	written examination
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
Introduction to the method of finite elements, basic idea and applications from the field of structural mechanics, shape functions, linear and non-linear problems, fatigue analysis with finite elements

Practical exercises, e.g. description of the classic FE analysis procedure (preprocessing, job management, postprocessing), handling of a common software tool

Prerequisites:
Mathematik I u. II, Mechanik I, Festigkeitslehre

Lecture/Seminar profile:

Interdisciplinary project work II (23_IPA5PT)

Degree course	LCW.ba
Course title	Interdisciplinary project work II
Course code	23_IPA5PT
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	0,4
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 primary goals 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

The project work is preferably carried out as individual work in Project Work II.
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 students' specialist knowledge from the previous semesters.
As far as possible, great importance is attached to practical tasks from industry. The course's laboratory facilities can be used for this purpose as required.
Optionally, the topic can already be based on the task in the Bachelor's thesis module and initial preliminary work can be carried out.

Prerequisites:
n.a.

Lecture/Seminar profile:

Analytical Chemistry I (23_AYC1VO_ENG)

Degree course	LTE.ba
Course title	Analytical Chemistry I
Course code	23_AYC1VO_ENG
Level	Bachelor
Term	WS25/26
Lecturer	Michaela Kröppl
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:
-Introduction to analytical chemistry: qualitative/quantitative analysis, limits of detection, limits of quantification;

-Introduction to physical measurement systems: electrochemical principles, weighing systems, volumetry;
-Computational fundamentals: density, concentration and proportion data, acids and bases, acid-base equilibria, pH, partition equilibrium;

-Methods of measurement: gravimetry, dimensional analysis/titration, qualitative ion analysis, extraction, distillation.

Prerequisites:
n.a.

Lecture/Seminar profile:

Business Administration I (23_BWL1IL_ENG)

Degree course	LTE.ba
Course title	Business Administration I
Course code	23_BWL1IL_ENG
Level	Bachelor
Term	WS25/26
Lecturer	Judith Frei
Contact hours per week	1
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 Business Administration;

-Core processes of a company;
-Corporate forms and company formation;
-Introduction to the balance sheet and the profit and loss account;
-basics of cost accounting (BAB, costing, basics of contribution margin accounting);

-Financial ratios

Prerequisites:
n.a.

Lecture/Seminar profile:

Chemistry I (23_CHE1LB_ENG)

Degree course	LTE.ba
Course title	Chemistry I
Course code	23_CHE1LB_ENG
Level	Bachelor
Term	WS25/26
Lecturer	Michaela Kröppl
Contact hours per week	3
ECTS credits	3
Course type	Laboratory session
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
-Introduction to laboratory work: safety, volume measurement, weighing, handling liquids, filtration, determination of dry matter, construction and use of glass apparatus;

-Basic analytical measurement methods: qualitative/quantitative concepts, titration, gravimetry;
-Synthetic reactions.

Prerequisites:
n.a.

Lecture/Seminar profile:

Chemistry I (23_CHE1VO_ENG)

Degree course	LTE.ba
Course title	Chemistry I
Course code	23_CHE1VO_ENG
Level	Bachelor
Term	WS25/26
Lecturer	Christian Forsich
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:
-Chemical basics: the periodic table, substances and elements, chemical reactions and their kinetics, chemical bonds, structure of simple inorganic substances, states of aggregation of substances, law of mass action, polarity;
-Chemical Reactions: Oxidation and reduction, solutions, complex compounds, anomaly of water, acid/base reactions;

-Chemical safety (H&P, CMR, exposure concepts).

Prerequisites:
n.a.

Lecture/Seminar profile:

Brewing Science (23_FER5IL_ENG)

Degree course	LTE.ba
Course title	Brewing Science
Course code	23_FER5IL_ENG
Level	Bachelor
Term	WS25/26
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.
- Production of a beer on a pilot plant scale (100 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 labeling proposal.

Prerequisites:
n.a.

Lecture/Seminar profile:

Biology (23_GBI1VO_ENG)

Degree course	LTE.ba
Course title	Biology
Course code	23_GBI1VO_ENG
Level	Bachelor
Term	WS25/26
Lecturer	Claudia Probst
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:
-The development of life on earth: characteristics of life, evolution);

-Cytology (structure and differences of cells, signal transduction, mitosis, cell differentiation).

-Systematics and anatomy of plants, insects and animals and their importance in ecosystems.

-Energy production of autotrophic and heterotrophic organisms (photosynthesis and cellular respiration).

-Basics of genetics and heredity (meiosis, Mendel).

-Tissue and organ formation in plants and animals; special chapters on animal form and function.

Prerequisites:
n.a.

Lecture/Seminar profile:

Food Technology I (23_LMT1IL_ENG)

Degree course	LTE.ba
Course title	Food Technology I
Course code	23_LMT1IL_ENG
Level	Bachelor
Term	WS25/26
Lecturer	Günther Wendlinger, Matthias Slatner
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:
-Introduction to food technology, areas and products of the food industry.
-Sample introduction to food processing technologies with emphasis on pastries, milk and beverages.

-Chemical-physical and microbiological causes of spoilage; chemical, physical methods of preservation.

-Changes in ingredients and sensory properties of foods during food production.
-Presentations and field trips to relevant plants (e.g., slaughterhouse, bakery/mill, spice manufacturer, commercial kitchen, beverage, dairy, starch plant).

Prerequisites:
n.a.

Lecture/Seminar profile:

Mathematics I (23_MAT1IL_ENG)

Degree course	LTE.ba
Course title	Mathematics I
Course code	23_MAT1IL_ENG
Level	Bachelor
Term	WS25/26
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:
- Calculate with real numbers, power rules, equations, inequalities, summation signs.

- Solving systems of linear equations.

- Bijectivity and inverse functions, polynomial functions, rational functions, limits of functions, trigonometric functions, exponential and logarithmic functions.

- Derivation of a function, derivation rules, curve discussions, extreme value problems.

- Introduction to a computer algebra system and use of the program in the above areas.

Prerequisites:
n.a.

Lecture/Seminar profile:

Stoichiometry I (23_STÖ1UE_ENG)

Degree course	LTE.ba
Course title	Stoichiometry I
Course code	23_STÖ1UE_ENG
Level	Bachelor
Term	WS25/26
Lecturer	Michaela Kröppl
Contact hours per week	1
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:
-Conversion of concentration units;

-Calculation of the amount of substance, content calculations (proportion and concentration);

-Turnover calculations of chemical reactions;

-pH value calculations of acids and bases, buffers and salts;

-Calculations of redox reactions;

-General gas equation.

Prerequisites:
n.a.

Lecture/Seminar profile:

Applied physics (24_AGP1IL_ENG)

Degree course	LTE.ba
Course title	Applied physics
Course code	24_AGP1IL_ENG
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	4
ECTS credits	5
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
- Basics: international system of units, orders of magnitude.
- Mechanics: Kinematics (velocity, acceleration, circular motion), dynamics (force, work, energy, power).

- Vibrations and waves.
- Fluid mechanics: Hydrostatics, flows, rheology.

- Electricity: charge, current, voltage, resistance, energy, power.
- Optics: wave propagation, reflection, refraction, lenses, optical instruments.

Prerequisites:
n.a.

Lecture/Seminar profile:

English I (23_ENG1UE)

Degree course	WFT.ba
Course title	English I
Course code	23_ENG1UE
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	1
ECTS credits	1
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Business Travel Situations:
Meeting people / Introductions
Introducing yourself
Introducing other people to each other, meeting someone at the airport, asking for and giving directions etc.
Socialising / Small talk
Telephoning
Countries / Cultural Awareness
Understanding peoples and their customs
Describing the economy
Describing jobs / companies (structure and layout / directions)
Daily (Work) Routine
Technical processes and vocabulary:
Materials (metal and plastics) properties and applications thereof
Grammar:
Question forms
Practise of Present tenses and Past tenses (Simple past / Present perfect)
Basic / Simple, short Presentations:
informative e.g. of a company
Passive for description of technical processes
Prepositions (time and place)

Prerequisites:
n.a.

Lecture/Seminar profile:

English III (23_ENG3UE)

Degree course	WFT.ba
Course title	English III
Course code	23_ENG3UE
Level	Bachelor
Term	WS25/26
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:
Presentations (technical and business): presenting topics from other subjects of the Semester 3 curriculum. Presenting facts, figures and describing trends through graphics (graphs and charts)
Presentation/explanation by students of topics from other subjects of the Semester 3 curriculum orally and/or in writing
Presentation of any project(s) undertaken during the semester and/or holding of meetings for such projects (e.g. Interdisciplinary Project)
Reading and discussion of articles on topics relevant/related to subjects of the curriculum
Audio-visual work (listening practice): watching relevant (=science/technology) documentary films + discussion thereof and vocabulary-building work
Reading and discussion of articles of general topical interest and/or themebased: e.g. the economy/the world of workGrammar revision as required e.g. more past tenses reinforcement, prepositions

Prerequisites:
n.a.

Lecture/Seminar profile:

Project I (23_PRO1PT)

Degree course	WFT.ba
Course title	Project I
Course code	23_PRO1PT
Level	Bachelor
Term	WS25/26
Lecturer	GmBH BIS Meldung Korrektur (Nicht Exportiert)
Contact hours per week	0,25
ECTS credits	4
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	10

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 III (23_PRO3PT)

Degree course	WFT.ba
Course title	Project III
Course code	23_PRO3PT
Level	Bachelor
Term	WS25/26
Lecturer	GmBH BIS Meldung Korrektur (Nicht Exportiert)
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 V (23_PRO5PT)

Degree course	WFT.ba
Course title	Project V
Course code	23_PRO5PT
Level	Bachelor
Term	WS25/26
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	10

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:

English IV:English for technical communicators (22_ENG5UE)

Degree course	PDK.ba
Course title	English IV:English for technical communicators
Course code	22_ENG5UE
Level	Bachelor
Term	WS25/26
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	10

Learning objectives:
n.a.

Content:
Oral and written language skills, with a focus on topics for technical communicators: instructions for use, controlled natural languages, rule-based writing, etc.
Prerequisites: English language skills at university level

Prerequisites:
n.a.

Lecture/Seminar profile:

English I (bb_ENG1UE)

Degree course	WFT.ba
Course title	English I
Course code	bb_ENG1UE
Level	Bachelor
Term	WS25/26
Lecturer	Michael Lappage
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Business Travel Situations:
Meeting people / Introductions
Introducing yourself
Introducing other people to each other, meeting someone at the airport, asking for and giving directions etc.
Socialising / Small talk
Telephoning
Countries / Cultural Awareness
Understanding peoples and their customs
Describing the economy
Describing jobs / companies (structure and layout / directions)
Daily (Work) Routine
Technical processes and vocabulary:
Materials (metal and plastics) properties and applications thereof
Grammar:
Question forms
Practise of Present tenses and Past tenses (Simple past / Present perfect)
Basic / Simple, short Presentations:
informative e.g. of a company
Passive for description of technical processes
Prepositions (time and place)

Prerequisites:
n.a.

Lecture/Seminar profile:

Project I (bb_PRO1PT)

Degree course	WFT.ba
Course title	Project I
Course code	bb_PRO1PT
Level	Bachelor
Term	WS25/26
Lecturer	
Contact hours per week	5
ECTS credits	4
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	10

Learning objectives:
n.a.

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

Prerequisites:
all preceding courses of the study program

Lecture/Seminar profile:

Plant Engineering - Case Studies (25_ABS3IL)

Degree course	AB.ma
Course title	Plant Engineering - Case Studies
Course code	25_ABS3IL_E
Level	Master
Term	WS25/26
Lecturer	David Kronawettleitner, Silvio Klein, Karl Langthaler, Martin Grosshaupt, Stefan Franz Höckner
Contact hours per week	4,4
ECTS credits	8,5
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
Dealing with specific issues in plant engineering projects: developing solutions and action options as well as presenting and discussing the solutions

Prerequisites:
n.a.

Lecture/Seminar profile:

Plant Engineering (25_AEN1VO)

Degree course	AB.ma
Course title	Plant Engineering
Course code	25_AEN1VO_E
Level	Master
Term	WS25/26
Lecturer	Christof Lanzerstorfer
Contact hours per week	2
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	German/English
Places for international students	5

Learning objectives:
n.a.

Content:
Flow Diagrams
Mass and energy balances
Strength of materials, thermal stresses and strains, elastic/plastic deformations, equivalent stresses (v'Mises, Tresca), stability
Pressure vessels, containers, apparatus, pipelines and fittings
Process engineering machines (pumps, compressors, conveyors,...)
Media systems (compressed air, cooling water,...)

Prerequisites:
Basics in Mechanics

Lecture/Seminar profile:

Plant permission (25_ANG3ILV)

Degree course	AB.ma
Course title	Plant permission
Course code	25_ANG3ILV_E
Level	Master
Term	WS25/26
Lecturer	Tibor Petrasch
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:
Requirements for the submission documents
Structure and basic concepts of business premises law
Approval of operating facilities according to GewO
Regulations for approved operating facilities
Emission presentation for project documents
Immission presentation for project documents
Waste management

Prerequisites:
n.a.

Lecture/Seminar profile:

Plant Safety (25_ANS2IL)

Degree course	AB.ma
Course title	Plant Safety
Course code	25_ANS3IL_E
Level	Master
Term	WS25/26
Lecturer	Silvio Klein
Contact hours per week	1
ECTS credits	1,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
CE Marking
Safety analyses (PAAG, HAZOP,...)
Machine safety
Explosion and Fire Protection
Safety on construction sites
Relevant standards and directives

Prerequisites:
n.a.

Lecture/Seminar profile:

Safety Engineering (25_ANS3VO)

Degree course	AB.ma
Course title	Safety Engineering
Course code	25_ANS3VO_E
Level	Master
Term	WS25/26
Lecturer	Christian Schatzl
Contact hours per week	1
ECTS credits	1,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
n.a.

Prerequisites:
n.a.

Lecture/Seminar profile:

Overall Plant Engineering I (25_APL1VO)

Degree course	AB.ma
Course title	Overall Plant Engineering I
Course code	25_APL1VO_E
Level	Master
Term	WS25/26
Lecturer	David Kronawettleitner
Contact hours per week	1
ECTS credits	1,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:

Terminology (plant, factory, etc.)
Project types in plant engineering (greenfield, brownfield, grassroot)
Planning principles (variant principle, etc.)
Integration of specialist trades in planning
Project organization from a holistic perspective
Project structuring (project structure plans in plant engineering, level of detail, practical application)
Planning the chronological sequence steps
Planning process (preliminary project, preliminary study, feasibility study, basic engineering, detail engineering, production drawings, etc.)
3D laser scanning
Layout planning in plant construction (procedure, aspects of consideration, application using practical examples)
Planning of the area structure
Detailed planning of peripheral equipment (impact protection, steel construction, platforms, transitions, workstations, cable routes, ICT, HVAC, etc.)
Building Information Modeling (BIM)

Prerequisites:
n.a.

Lecture/Seminar profile:

Civil Engineering in plant construction business (25_BAU1VO)

Degree course	AB.ma
Course title	Civil Engineering in plant construction business
Course code	25_BAU1VO_E
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	3
Course type	Lecture
Examinations	written examination
Language of instruction	German/English
Places for international students	5

Learning objectives:
n.a.

Content:
Course content Introduction to subsoil problems, soil mechanics and foundations
Introduction to concrete construction
Introduction to steel construction
Introduction to structural analysis
Building construction planning
Technical building equipment (lighting, heating, air conditioning, ventilation, fire protection, communication)
Infrastructure (roads, sewers, drainage, etc.)
Construction contracts (tendering, invoicing)
Construction implementation
Relevant standards and regulations

Prerequisites:
Basics in mechanics and materials science

Lecture/Seminar profile:

Balance of plant (25_BOP1VO)

Degree course	AB.ma
Course title	Balance of plant
Course code	25_BOP1VO_E
Level	Master
Term	WS25/26
Lecturer	Christof Lanzerstorfer, Karl-Heinz Greßlehner, Oliver Laic, Richard Auberger
Contact hours per week	2
ECTS credits	3
Course type	Lecture
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:
Basics in mechanics and materials science

Lecture/Seminar profile:

International contract law (25_CRL1VO)

Degree course	AB.ma
Course title	International contract law
Course code	25_CRL1VO_E
Level	Master
Term	WS25/26
Lecturer	Kurt Manzenreiter
Contact hours per week	2
ECTS credits	2,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Basic knowledge of foreign legal systems
International commercial law, Uniform Law (UNIDROIT, UN Sales Convention/CISG)
Trade practices and trade terms, Incoterms
Important types of contracts (especially developer contract, construction contract, contract, investment contract, license, freight forwarding and transport contract, employment contract, cooperative agreement, contract of insurance)
Arbitration, penalties
International payments and payment security, and performance and credit protection

Prerequisites:
n.a.

Lecture/Seminar profile:

Contract / Risk Management (25_CRM3IL)

Degree course	AB.ma
Course title	Contract / Risk Management
Course code	25_CRM3IL_E
Level	Master
Term	WS25/26
Lecturer	David Kronawettleitner
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:
Contract Management (from the inquiry to the entry into force of the contract)
Operating claims management
The environment of claim management (claim organization, claim strategy)
Risk analysis and risk management (based on failure mode and effects analysis)
Risk Identification
Risk Evaluation (Qualitative and Quantitative, including Risk Aggrega-tion)
Risk Measures
Risk Matrix
Change Request Management (Changes in project scenarios)
Types of Changes
Non-Conformance Costs
Change Process and Procedures for Handling Changes
Documents of Change Management
Organization in Change Management
Calculation of Changes
Claim Management (Operational Claims Management)
Culture and Philosophy in Claim Management
4-Pillar Principle in Claim Management
Claims vs. Change Orders
Handling Incoming and Outgoing Claims
Claim Defense (Defect notices, additional demands, etc...)

Addressing Disputed Situations in Claim Managment
Organizational Possibilities in Claim Management
Calculation and Evidence in Claim Management

Prerequisites:
n.a.

Lecture/Seminar profile:

Digital Construction (BIM) (25_DCO3IL)

Degree course	AB.ma
Course title	Digital Construction (BIM)
Course code	25_DCO3IL_E
Level	Master
Term	WS25/26
Lecturer	Miloš Rakonjac, Thomas Schichl
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:
Digital system planning
Building Information Modeling - BIM
Use of digital devices in plant plannng & realization (AR/VR)
Digital planning process
Digital sight management

Prerequisites:
n.a.

Lecture/Seminar profile:

Intercultural Communication (25_KFK1UE)

Degree course	AB.ma
Course title	Intercultural Communication
Course code	25_KFK1UE_E
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	2

Learning objectives:
n.a.

Content:
Theories and core concepts of intercultural communication
Processes of intercultural adaptation (e.g., Milton Bennett's stage model, etc.)
Cultural specificity in international meetings and projects
Recognizing cultural differences
Practical examples based on real-life cases in dealing with different cul-tures
Development of key intercultural competencies

Prerequisites:
Communication basics

Lecture/Seminar profile:

Management of project crisis (25_MPC3UE)

Degree course	AB.ma
Course title	Management of project crisis
Course code	25_MPC3UE_E
Level	Master
Term	WS25/26
Lecturer	David Kronawettleitner
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:
Turnaround Projects
Crisis Management in Projects (Systematic Approaches)
Crisis Communication
Stakeholder Management in Project Crises
Project Cancellation
Crises in Project Failures
Case Studies on Project Crises

Prerequisites:
n.a.

Lecture/Seminar profile:

Erection of Plants/Site Management (25_MUI3ILV)

Degree course	AB.ma
Course title	Erection of Plants/Site Management
Course code	25_MUI3ILV_E
Level	Master
Term	WS25/26
Lecturer	Richard Auberger, Max Brandt
Contact hours per week	2,6
ECTS credits	4
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Assembly planning:
Overview of assembly methods for steel construction, mechanics, piping and electrics
Cost calculation for assembly services
Scheduling and process planning for assembly and commissioning
Personnal deployment planning
Construction site equipment and local infrastructure
Installation contracts (forms of contract, tendering, invoicing)
Standards and Regulations
Construction Site Managment
Construction site organization and administration (reporting,etc..)
Schedule and progress control on the construction site
Testing and acceptance on the construction site
Health and safety on the construction site
Legal basis for construction site management
Commissioning of complete systems
Commissioning process and organization (inl. sub-steps/sub-phases)
General conditions for commissioning (incl. safety aspects)
Cold / warm commissioning / virtual commissioning
Factory & site acceptance tests (FAT / SAT)
Performance and availability tests / integration tests and ramp-up
Needs-based requirements for technical plant documentation

Case studies from industrial plant construction practice

Prerequisites:
n.a.

Lecture/Seminar profile:

Sustainable Energy Systems (25_NES1IL)

Degree course	AB.ma
Course title	Sustainable Energy Systems
Course code	25_NES1IL_E
Level	Master
Term	WS25/26
Lecturer	Albert Angerbauer
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	German/English
Places for international students	5

Learning objectives:
n.a.

Content:
Thermodynamic Analysis: First law for the stationary flow process, Sec-ond law of thermodynamics, Entropy, Cyclic processes, Thermal efficien-cy, Exergy efficiency, Application of exergy efficiency; Industrial Energy Systems: Combustion boilers, including efficiency considerations and CO2 balance, Steam generation and energy require-ments; Heat exchangers: fundamental principles of heat transfer, funda-mental principles of heat exchangers;

Machinery: Gas turbines, Steam turbines, Gas engines;

Process Cooling and Temperature Elevation: Compression refrigeration systems, Heat pumps;

Thermal Energy Storage: Liquid-based thermal energy storage, Other types of thermal energy storage;

Processes in Process Engineering for Hydrogen Utilization, Electrical Energy: Fundamentals of loss assessment and CO2 balance; Evaluation of energy systems: Specific CO2 generation, Exergy benefits.

Production of hydrogen from renewable energy sources, its transportation and storage, as well as its utilization in industrial plants, and the develop-ment potential of hydrogen as a renewable energy carrier.Excursions to research facilities at the University of Applied Sciences Upper Austria

(FH OOE) related to thermal engineering and hydrogen (Hydrogen Cen-ter).Preparation of a seminar paper with a specific task in plant engineer-ing in the field of sustainable energy systems.

Prerequisites:

Fundamentals of thermodynamics

Lecture/Seminar profile:

Sustainable Energy Systems (25_NES1UE)

Degree course	AB.ma
Course title	Sustainable Energy Systems
Course code	25_NES1UE_E
Level	Master
Term	WS25/26
Lecturer	Albert Angerbauer
Contact hours per week	1
ECTS credits	1,5
Course type	Seminar
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	1

Learning objectives:
n.a.

Content:
Social and legal environment;
Thermodynamic analysis: Thermodynamic systems, parameters of thermodynamics, first law, first law for the stationary flow process, second law of thermodynamics, entropy, cyclic processes, thermal efficiency, exergetic efficiency, application of exergetic efficiency;
Industrial energy systems: combustion boilers incl. efficiency analysis and CO2 balance, steam generation and energy demand;
Heat exchangers: basic principles of heat conduction, basic principles of heat exchangers, gas - gas heat exchangers, vapour - liquid heat exchangers, liquid - liquid heat exchangers;
Working machines: gas turbines, steam turbines, gas engines
Process refrigeration and heat pumps: compression refrigeration machines, absorption refrigeration systems, heat pumps;
Heat storage: Liquid-based heat storage, other types of heat storage
Chemical energy: production of hydrogen by electrolysis, storage and transport of hydrogen, process engineering processes for the utilisation of hydrogen, carbon-based energy sources based on hydrogen, biogas plants
Electrical energy: basics of loss assessment and the CO2 balance
Evaluation of energy systems: Specific CO2 generation, exergetic benefits

Prerequisites:
Fundamentals of thermodynamics

Lecture/Seminar profile:

Accounting and Project financing (25_RPF1VO)

Degree course	AB.ma
Course title	Accounting and Project financing
Course code	25_RPF1VO_E
Level	Master
Term	WS25/26
Lecturer	Stefan Hofmayr
Contact hours per week	2
ECTS credits	2,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Fundamentals of Cost Accounting and Budgeting Project

Prerequisites:
n.a.

Lecture/Seminar profile:

Welding technology (25_SWT1IL)

Degree course	AB.ma
Course title	Welding technology
Course code	25_SWT1IL_E
Level	Master
Term	WS25/26
Lecturer	Rainer Georgi
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	German/English
Places for international students	5

Learning objectives:
n.a.

Content:
Welding processes
Welding technology in plant engineering
Weldability of materials
Pre- and post-treatment of weld seams
Testing of weld seams
Standards and guidelines

Prerequisites:
Fundamentals of mechanics and materials science

Lecture/Seminar profile:

Technical procurement, Transport and logistics (25_TTL3IL)

Degree course	AB.ma
Course title	Technical procurement, Transport and logistics
Course code	25_TTL3IL_E
Level	Master
Term	WS25/26
Lecturer	Daniel Schatzl, Michael Lehner
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:
Purchasing organization
Technical procurement process
Supplier search and evaluation
Supplier management
Offer review and comparison
Procurement strategies
Deadline monitoring
Quality monitoring
Stationary and mobile lifting equipment in plants
Means of transportation and lifting equipment in assembly
Transport handling (means of transport for large components, temporary corrosion protection, etc.)
Construction site transportation
Storage on construction sites (weather protection, temporary storage facilities,...)
Relevant standards regulations and guidelines Transport handling

Prerequisites:
n.a.

Lecture/Seminar profile:

Sales & pre-project phase (25_VPR3IL)

Degree course	AB.ma
Course title	Sales & pre-project phase
Course code	25_VPR3IL_E
Level	Master
Term	WS25/26
Lecturer	Martin Grosshaupt
Contact hours per week	1
ECTS credits	1,5
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
Technical Sales in Plant Engineering
Tender basis
Tender documents
Types of quotations (EPC, EPCM, etc.)
Calculation of quotations
Calculation methods (mark-up calculation, option prices, contribution margins, etc..)

Prerequisites:
n.a.

Lecture/Seminar profile:

Automotive IT Systems 1 (20_AIT1VO)

Degree course	AMM.ma
Course title	Automotive IT Systems 1
Course code	20_AIT1VO
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	1
ECTS credits	2
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
- Automotive processing architectures
- Real-time systems
  - Linux as RT-System
  - Windows as RT-System
- Priority considerations and the application of scheduling in RTOS
- Security leaks and their analyzation

Prerequisites:
Basic knowledge in programming

Lecture/Seminar profile:

Automotive IT Systems 3 (20_AIT3IL)

Degree course	AMM.ma
Course title	Automotive IT Systems 3
Course code	20_AIT3IL
Level	Master
Term	WS25/26
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 know
- the basics of concrete means of communication between vehicles and infrastructure
- What Cooperative Intelligent Transportation Systems are
- The technical needs for the implementation of C-ITS
- Relevant basics, properties and problems of mobile communication systems

Students can
- analyze the communication infrastructure of connected vehicles
- Derive use cases form the fact of being connected
- Derive demands and requirements for V2X ecosystem

Content:
- IT-systems in the vehicle
  - overview
  - cooperation of systems
- Car2x communication
  - Car-2-Car (C2C)
  - Car-2-Infrastructure (C2I)
  - Technical standards (802.11p and LTE respectively)
  - Car2x based services
  - opportunities and risks

Prerequisites:
Basic knowledge in programming

Lecture/Seminar profile:

Current Topics in Mobility (20_CTM1VO)

Degree course	AMM.ma
Course title	Current Topics in Mobility
Course code	20_CTM1VO
Level	Master
Term	WS25/26
Lecturer	Thomas Schlechter
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:
- Conditions and factors influencing e-mobility
- Current trends and future topics of mobility
- Local geographical differences of politics vs. technology on future mobility
- Change of business among the Mobility Sector
- How green is Future Mobility? Under which assumptions (e.g., electricity mix)?
- Safety of BEV

Prerequisites:
Basic knowledge in programming

Lecture/Seminar profile:

Entrepreneurship and New Business Development (20_EBD2IL)

Degree course	AMM.ma
Course title	Entrepreneurship and New Business Development
Course code	20_EBD2IL
Level	Master
Term	WS25/26
Lecturer	Kristiana Roth
Contact hours per week	1,5
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
After the course, the students should be able…
- to describe the difference between different business creation pro-cesses, select them in relation to the specific project context and choose appropriate tools and methods to be applied
- to design business models synthetizing market, technological and organizational requirements based on empirical insights
- to analyze business models and identify critical components
- to describe the elements of a business plan

Content:
- Fundamentals of new business creation and planning
- Overview on personal characteristics of entrepreneurs and suc-cess factors of entrepreneurship
- Intrapreneurship vs. entrepreneurship and start-ups as source of innovation for incumbents
- Structures to support entrepreneurs (accelerators, incubators, etc.)
- Processes of new business creation
- Fundamentals and tools of business model creation (e.g. St. Gallen Business Model Navigator, Business Model Canvas)
- Concepts that propels business models to success and specifies of digitally enabled business models (e.g. sharing economies, net-work effects)
- Business plan creation and analysis
- Financing and funding of start-ups

Prerequisites:
Innovation fundamentals

Lecture/Seminar profile:

Innovation Management (20_INM1IL)

Degree course	AMM.ma
Course title	Innovation Management
Course code	20_INM1IL
Level	Master
Term	WS25/26
Lecturer	Kurt Gaubinger
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
- all major dimensions of innovation management frameworks (e.g. strategy, process, culture, organization)
- systematic target planning approaches in innovation manage-ment.
- success factors for technology and innovation management
- specifics of agile / hybrid innovation methods.

Students are able to
- design innovation processes with a focus on the front end of in-novation.
- apply strategic foresight methods.
- apply various open innovation methods.
- apply specific creativity techniques and other techniques for idea generation and idea evaluation.
- apply classical and agile innovations management tools to re-duce the uncertainty of innovation projects.

Content:
- Objectives of R&D, technology management and innovation management
- Innovation management framework
- Success factors for technology and innovation management
- Stage-gate processes and hybrid stage-gate processes
- Functions and roles in technology and innovation management
- Innovation-promoting corporate organisation
- Measures for an innovation-friendly corporate culture

- Open Innovation, Customer Integration, and Innovation Networks
- Agile innovation methods and tools

Prerequisites:
According to the prerequisites for degree programme access

Lecture/Seminar profile:

Business Law & Intellectual Property Rights (20_LAW3VO)

Degree course	AMM.ma
Course title	Business Law & Intellectual Property Rights
Course code	20_LAW3VO
Level	Master
Term	WS25/26
Lecturer	Michael Stadler
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:
The students know essential legal issues relating to the process of product development, based on particular legal questions and con-tract types.
 Case studies are used to demonstrate the practical relevance

Content:
Intellectual property right, competition law, non-disclosure agree-ments, inventions
 Guarantee and warranty, product liability, industrial safety, trade law
 Trade marks, models and patents, homologation, ECE, FMVSS
 Licenses, general terms and conditions, exclusion of liability
 Regulations under public law, expiration of trade marks, models and patents

Prerequisites:
According to the prerequisites for degree programme access

Lecture/Seminar profile:

Model Based Engineering 1 (20_MBE1IL)

Degree course	AMM.ma
Course title	Model Based Engineering 1
Course code	20_MBE1IL
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	3
ECTS credits	5
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
Students know and understand
- concepts of system theory and modelling
- basics and processes of analogue control technology
- state space representation of mechatronic systems
- basics of numerical simulation
- basics of ranking problems (group decisions)
- derivation of priorities from ranking problems
- scheduling theory and real implementation

Students can
- comprehend and apply modelling processes to mechanical, electrical, hydraulic and linked systems
- calculate selected transfer functions and elements
- deduce and evaluate system characteristics of mechatronic systems
- apply selected processes of analogue control technology
- analyze and assess dynamic behavior in the state space
- design linear state regulators
- apply simulation tools to vehicle-specific mechatronic systems
- apply the theory of group decisions on real examples
- apply the findings of priority evaluation towards schedues for information processing systems

Content:

- Concepts of system theory and modelling
  - system theory
  - system concepts
  - modelling concepts
- Modelling process
- Modelling of mechatronic systems
- System characteristics
- Basics and processes of analogue control technology
- State space representation of mechatronic systems
  - analysis of the dynamic behavior in the state space
  - design and implementation of linear state regulators
  - design and implementation of linear state observers
- Simulation (i.e.. MATLAB, SIMULINK, ASCET)
- Group decision making (ranking problems)
- Scheduling theory and implementation

Laboratory
- identification of modelling parameters
- design of controllers and observers
- analysis of model behavior by means of simulation studies

Modelling drive train with concentrated components (‚meta-level')
- Examples on group decision making (ranking problems)
- Examples on scheduling theory and implementation

Prerequisites:
- Basic mathematics of control technology (Laplace) Solving differential equations in the time and frequency field

Lecture/Seminar profile:

Mechatronic Systems Validation (20_MSV3IL)

Degree course	AMM.ma
Course title	Mechatronic Systems Validation
Course code	20_MSV3IL
Level	Master
Term	WS25/26
Lecturer	Christian Ertl
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
Students can
evaluate, model and simulate safety systems like ASR, differential locking systems with regard to functionality

Content:
Sensitivity for the significance of the validation and safety of mech-atronic systems
 Differentiation functional validation and long-term safety
 Methods and tools for the validation of mechatronic systems
o system tests for load, climate and electromagnetic com-patibility
o reliability and safety tests of the system
o functional validation on the HIL, test station, vehicle field test of the end product according to customer require-ments
o test statistics
 Planning, measuring and evaluation of tests of mechatronic sys-tems

Prerequisites:
n.a.

Lecture/Seminar profile:

New Product Development (20_NPD1IL)

Degree course	AMM.ma
Course title	New Product Development
Course code	20_NPD1IL
Level	Master
Term	WS25/26
Lecturer	Christoph Baumberger
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:
CAE in the motor vehicle industry (overview, connections, interfaces)
- Development methods for mechatronic systems „V Model“; VDI 2206:
- Requirements for Development
- Specifications
- System and Product Design
- Model Formation and Simulation (FEM, CFD, MKS, …)
- Domain-Specific Component Draft
- Prototypes
- Component Integration
- Module Test
- System Integration (Hardware)
- System Integration (Software)
- System and Product Tests
- Production and Market Tests.

Prerequisites:
Basic knowledge programming

Lecture/Seminar profile:

Production Management (20_PRM1IL)

Degree course	AMM.ma
Course title	Production Management
Course code	20_PRM1IL
Level	Master
Term	WS25/26
Lecturer	Felix Friedrich Reumann
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:
- Logistics and supply-chain management
- Cooperation of development, purchasing and production
- Basics of production organization
- Lean production as philosophy,
- Lean production tools
- Value-stream-analysis, value-stream-design
- Optimization of administrative processes

Prerequisites:
According to the prerequisites for degree programme access

Lecture/Seminar profile:

Automotive Quality Management 1 (20_QMA1IL)

Degree course	AMM.ma
Course title	Automotive Quality Management 1
Course code	20_QMA1IL
Level	Master
Term	WS25/26
Lecturer	Thomas Junggeburth
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:
- Quality management systems
- Principles of ISO9001
- Principles of IATF16949
- Organizational Structures and Processes
- Documentation and records
- Control loops within quality management
- Quality cost calculation
- Requirements for processes of an organization

Prerequisites:
According to the prerequisites for degree programme access

Lecture/Seminar profile:

Sensors and Micro Actuators (20_SAC1IL)

Degree course	AMM.ma
Course title	Sensors and Micro Actuators
Course code	20_SAC1IL
Level	Master
Term	WS25/26
Lecturer	Thomas Schlechter, Andreas Löffler
Contact hours per week	3
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
- Basics of sensor technology
- Basics of measurement and process data acquisition and data processing
- Basics of control technology and its application
- Specific sensors in vehicles (temperature, pressure, flow, gas, LiDAR, Radar, ultra-sonic, etc.)
- Smart and Virtual sensors
- Basic principles of micro actuators (e.g., piezo and electro-static effect)

Prerequisites:
According to the prerequisites for degree programme access

Lecture/Seminar profile:

Vehicle Components and Driving Dynamics (20_VCD1IL)

Degree course	AMM.ma
Course title	Vehicle Components and Driving Dynamics
Course code	20_VCD1IL
Level	Master
Term	WS25/26
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:
n.a.

Content:
- Motor vehicle architecture concepts
- Motor vehicle categorisation
- Tyres
- Motor vehicle dynamics
- Chassis
- Steering systems (active and passive)
- Brakes (eg. hydraulics, automatic handbrake)
- Handling and driving dynamics

Prerequisites:
According to the prerequisites for degree programme access

Lecture/Seminar profile:

English for civil engineers within cross-cultural communication (EN) (KFK1UE)

Degree course	BI.ma
Course title	English for civil engineers within cross-cultural communication (EN)
Course code	KFK1UE
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Practice-oriented session
Examinations	written examination
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Theories and core concepts of intercultural communication Processes of intercultural adaptation (e.g. Milton Bennett's step-by-step model,...)
Cultural and mentality-based differences in international "meetings" and projects
Establishing practice in negotiating and conflict management in an intercultural context
Development of intercultural key competences
Development of specialist vocabulary in the fields of glass, wood, concrete and steel construction as well as construction technology, building services engineering, structural and civil engineering, construction management and construction industry, environmental protection and safety on the basis of current projects / project descriptions in relevant current magazines and websites.

Prerequisites:
n.a.

Lecture/Seminar profile:

Resource-efficient Building (RES3VO*)

Degree course	BI.ma
Course title	Resource-efficient Building
Course code	RES3VO
Level	Master
Term	WS25/26
Lecturer	Gerald Leindecker
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:
This course aims to study the various strategies of resource-efficient buildings adapted to use, climate and environmental impact. The idea of resource-efficient building is to target objectives such as using energy, water, and other resources more efficiently, protecting the occupant health, and reducing the overall impact of buildings to the environment. Sustainable or bioclimatic building ensure interior comfort through factors such as geometry, orientation, materiality and the right choice of construction system. Its objective is to reduce energy consumption and environmental impact associated with all stages of building´s life like manufacture, construction, operation and maintenance, even including aspects of demolition and recyclability of incorporated materials (Life Cycle Assessment – LCA).
Along with lectures, introducing different strategies in bioclimatic design, the student will

- know and evaluate the different bioclimatic design strategies (materiality, orientation, opening and ventilation).
- understand the role of passive and active solar strategies as part of the intelligent design in building
- apply the gathered knowledge in proposals for sustainable buildings of low energy consumption
- determine how LCA can be used to estimate building impacts and understand how it can lead to improved environmental-friendly solutions in building

Content:
Thermal Comfort / Building Physics
Passive sustainable design strategies
Active strategies of sustainable design
Energy Standards
Building certification systems

Life cycle assessment (LCA) in building / ecomaterials
Pioneers of Zero-Energy-Building

Prerequisites:
n.a.

Lecture/Seminar profile:

Energy Automation and Protection Systems (21_EAP1LE)

Degree course	EE.ma
Course title	Energy Automation and Protection Systems
Course code	21_EAP1LE
Level	Master
Term	WS25/26
Lecturer	Herbert Grömer
Contact hours per week	1
ECTS credits	1
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
•Knowledge of the fundamentals and topology of a communica-tion network using Ethernet-based technology.
•Knowledge of communication protocols in the field of energy automation and protection technology
•Knowledge of the basics of protection technology / known pro-cedures and concepts
•Knowledge of the practical use of protection functions and their parameterization (for individual devices and entire protection concepts)

Content:
Basics of communication network technologies and its practical applications
Basics of network security
Standardized communication protocols for use in power engineering (IEC and IEEE)
Network traffic/protocol analysis
Basics of power system protection technology - components and topology of a protection arrangement
Basic principles in protection technology:
Overcurrent protection
Distance protection
Differential protection
Protection concepts/ Possible realization of redundant protection concepts

Prerequisites:
n.a.

Lecture/Seminar profile:

EMC and EMI Aspects (21_ECI3LE)

Degree course	EE.ma
Course title	EMC and EMI Aspects
Course code	21_ECI3LE
Level	Master
Term	WS25/26
Lecturer	Bernd Deutschmann
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:
n.a.

Content:
Physics of coupling principles (galvanic, induction of electric and magnetic fields)
EMC and EMI proof design concepts
EMC and EMI shielding
Simulation and calculation of EMC and EMI approaches
Lightning effects and lightning protection concepts
Simulation of lightning protection systems

Please note: Students enrolled in this course must also enroll in 21_ECI3LB

Prerequisites:
n.a.

Lecture/Seminar profile:

Energy Markets and Energy Law (21_EME3LE)

Degree course	EE.ma
Course title	Energy Markets and Energy Law
Course code	21_EME3LE
Level	Master
Term	WS25/26
Lecturer	Alexander Schultmeyer, Valentina Eigner, Kenneth Wallace-Mueller
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:
Market Concepts: History of European Electricity and Gas Markets, EU Energy Law, Regulation of Markets, EU Internal Market of Electricity, Market Rules, Guidelines and Network Codes, EU Environmental Law
Products, Commodities and Energy Services: Energy Assets Pricing, OTC Trading, Energy Exchange Spot Market, Intraday Market, Balance Energy, Capacity Markets, Renewables Support Schemes, Emissions Trading System, Green Certificates
Market Risk: Risk Management for Electricity Trading, Hedging Strategies
Systems Security: System Balancing, Reserve Capacities for Frequency Control, Auxiliary Services for TSOs, Network Capacity Allocation, Congestion Management

Prerequisites:
n.a.

Lecture/Seminar profile:

Financing (21_FIN3LE)

Degree course	EE.ma
Course title	Financing
Course code	21_FIN3LE
Level	Master
Term	WS25/26
Lecturer	Andreas Gumpetsberger
Contact hours per week	1
ECTS credits	1
Course type	Lecture
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Financial assessment of projects
Concept of levelized cost
Business plan and energy pricing
Energy pricing with respect to examples like
• Classical energy utilization
• Domestic systems
• Island systems
• Microgrid systems
Overview on marketing and market development
Contracting
Funding of projects on international degree
Financial assessment of international and national projects

Prerequisites:
n.a.

Lecture/Seminar profile:

Advanced High Voltage Engineering (21_HEI3LE)

Degree course	EE.ma
Course title	Advanced High Voltage Engineering
Course code	21_HEI3LE
Level	Master
Term	WS25/26
Lecturer	Christof Sumereder
Contact hours per week	3
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
Breakdown in solid and liquid dielectrics, advanced physics
Breakdown in liquids, advanced physics
Overvoltages, testing procedures and insulation coordination
Advanced non-destructive insulation test techniques
Testing and diagnosis at HV power equipment and condition evaluation

Prerequisites:
High Voltage Engineering I (bachelor)

Lecture/Seminar profile:

Advanced Calculus (21_MAT1LE)

Degree course	EE.ma
Course title	Advanced Calculus
Course code	21_MAT1LE
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	3
ECTS credits	5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
Advanced Calculus:
Vector Analysis: Vector Field, Divergence, Curl, Nabla-Operator, Volume Integrals, Line Integrals, Surface Integrals, Divergence Theorem, Stokes' Theorem
Partial Differential Equations: Separation of Variables

Prerequisites:
Mathematics for engineers at a bachelor's level

Lecture/Seminar profile:

Signal Analysis and Machine Learning (21_MES1LE)

Degree course	EE.ma
Course title	Signal Analysis and Machine Learning
Course code	21_MES1LE
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
Learning objectives:
- Software-based analysis of discrete-time signals (MATLAB, Python) and application of theoretical concepts from the field of signal- and data analysis.
- Introduction to fundamental concepts in Machine Learning.

Content:
- Understanding of basic properties of measurement signals (time domain, frequency domain) and their mathematical description.
- Basic algorithms of digital signal processing: Convolution, Correlation, Fourier- and Wavelet transformation
- Supervised / Unsupervised Machine Learning Algorithms
- Classification, Regression, Clustering
- Examples in MATLAB and Python

Prerequisites:
Measurement Engineering and Sensor Systems I (bachelor)

Lecture/Seminar profile:

Cross-Cultural Negotiations (21_SSK1PR)

Degree course	EE.ma
Course title	Cross-Cultural Negotiations
Course code	21_SSK1PR
Level	Master
Term	WS25/26
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:
Theory and key principles of intercultural communication;
Harvard Negotiation concept;
Introduction to negotiation and meeting moderation;
Cultural specificity in international meetings and projects
Practicing negotiation skills and conflict resolution in a intercultural context;
Development of intercultural key competences
Efficient preparation for successful negotiations;
Creation of results which satisfy both parties (win-win situations);
Methods and tools of meeting moderation and discussion facilitation;
Role, attitude, tasks of the moderator/ discussion leader;
Interventions techniques (target-review, interviewing technique, feedback technique, technique of visual discussions);

Prerequisites:
n.a.

Lecture/Seminar profile:

Bionics (20_BIO3IL)

Degree course	IPM.ma
Course title	Bionics
Course code	20_BIO3IL
Level	Master
Term	WS25/26
Lecturer	Kristina Wanieck
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Explanation of terms and historical background
• Subfields of bionics
• Structural bionics
• Anthropobionics (human-machine interaction)
• Engineering optimisation using nature as a model

Prerequisites:
n.a.

Lecture/Seminar profile:

Digital Factory (20_DIF3VO)

Degree course	IPM.ma
Course title	Digital Factory
Course code	20_DIF3VO
Level	Master
Term	WS25/26
Lecturer	Thomas Schichl
Contact hours per week	2
ECTS credits	2
Course type	Lecture
Examinations	oral or written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
- Factory and production control
- Data analyses for status reporting (dashboards)
- Predictive maintenance or production and quality optimization
- Automation of production processes and of interlinked business processes
- IT security aspects
- The collaboration of humans and machines
- Methods of digital twins
- The use of virtual and augmented reality
- The networking of machines and plants
- Advanced digitization topics

Prerequisites:
n.a.

Lecture/Seminar profile:

Design Project: Technical Design II (20_DPT3PT)

Degree course	IPM.ma
Course title	Design Project: Technical Design II
Course code	20_DPT3PT
Level	Master
Term	WS25/26
Lecturer	Markus Kretschmer
Contact hours per week	3
ECTS credits	5
Course type	Project
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Carefully selected and prepared "model examples" from professional practice are addressed either individually or in small groups, under the supervision of the lecturer. The lecturer acts as moderator and "senior expert", and provides methodological or expert assistance as required. The model examples incorporate typical concepts and methods from professional practice as "best practices". The focus here is on a systematic, problem-oriented approach toward problem solving and design development.
• Completing a design project
• Using and adapting specific design methodologies
• Overview of the design process.

Prerequisites:
n.a.

Lecture/Seminar profile:

R&D Controlling (20_FEC3IL)

Degree course	IPM.ma
Course title	R&D Controlling
Course code	20_FEC3IL
Level	Master
Term	WS25/26
Lecturer	Sandra Mühlböck
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Modern R&D controlling methods
• Lifecycle costing (design to cost, LCC, TCO)
• Depicting R&D costs on the balance sheet, budgeting R&D departments
• Innovation and performance measurement
• Innovation/R&D balanced scorecard
• Controlling Open Innovation
• Innovation audit.

Prerequisites:
n.a.

Lecture/Seminar profile:

Finance (20_FIN3VO)

Degree course	IPM.ma
Course title	Finance
Course code	20_FIN3VO
Level	Master
Term	WS25/26
Lecturer	Andreas Gumpetsberger
Contact hours per week	1
ECTS credits	1
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Forms of financing (debt and equity financing, internal and external financing)
• Cash flow calculations, financial planning
• Capital and financial markets
• Venture financing and investment financing
• Start-up financing
• Export financing
• Financing models and financial support
• special forms of financing (leasing, factoring)

Prerequisites:
n.a.

Lecture/Seminar profile:

International Marketing & Management (20_IMM3IL)

Degree course	IPM.ma
Course title	International Marketing & Management
Course code	20_IMM3IL
Level	Master
Term	WS25/26
Lecturer	Alexander Christian Bauer
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
•International technology marketing
•Significance of internationalisation and the internationalisation process
•Situational analysis methods in international marketing
•International market research
•Strategic thrusts and competitive strategies in the international marketing of industrial goods
•International (operative) marketing of industrial goods according to business type.
•Investment business
•Systems business
•Supplier business
•Product business

Prerequisites:
Fundamentals of Marketing/Management

Lecture/Seminar profile:

Leadership (20_KFK3UE)

Degree course	IPM.ma
Course title	Leadership
Course code	20_KFK3UE
Level	Master
Term	WS25/26
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	6

Learning objectives:
n.a.

Content:
Leadership models, functions and duties
- Key management competencies
- Relationship between leadership and personality
- The role of management as the sum of all expectations of the person occupying the role
- Management as the multiplier of an organisation's goals and values
- Management as the developer of its own personnel
- Influences on leadership (external and internal factors)
- Cooperative leadership behavior
- Employee decision-sharing
- Dealing with power and information

Prerequisites:
n.a.

Lecture/Seminar profile:

Short-Term Design Project (20_KZE3PT)

Degree course	IPM.ma
Course title	Short-Term Design Project
Course code	20_KZE3PT
Level	Master
Term	WS25/26
Lecturer	Michael Schwidefsky
Contact hours per week	2
ECTS credits	2
Course type	Project
Examinations	continuous assessment
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

Content:
• Completing a short-term design project
• Applying specific design methodologies

Prerequisites:
n.a.

Lecture/Seminar profile:

Customer Integration in NPD (20_MRI3IL)

Degree course	IPM.ma
Course title	Customer Integration in NPD
Course code	20_MRI3IL
Level	Master
Term	WS25/26
Lecturer	Dietfried Globocnik
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
•Understanding the Challenges at the Front End of Inno-vation
•Knowing the principles of Strategic Foresight and how to work with scenarios
•Gaining insights into Innovative Customer Integration tools for ideation and evaluation at the front end of innovation
•Learning about the usage of Open Innovation Approaches and Cross Industry Innovation at the Front End of In-novation
•Business Model innovation

Prerequisites:
n.a.

Lecture/Seminar profile:

Reverse Engineering (20_REG3IL)

Degree course	IPM.ma
Course title	Reverse Engineering
Course code	20_REG3IL
Level	Master
Term	WS25/26
Lecturer	Christian Zehetner
Contact hours per week	1,2
ECTS credits	1,2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Capturing and processing complex geometries
• Digitising systems (3D coordinate measurements, fringe projection scanners, laser scanners, computer tomography)
• CAD/prototype variance analysis
• Object reconstruction
• Design-oriented reverse engineering

Prerequisites:
n.a.

Lecture/Seminar profile:

Supply Chain Management (20_SCM3IL)

Degree course	IPM.ma
Course title	Supply Chain Management
Course code	20_SCM3IL
Level	Master
Term	WS25/26
Lecturer	Patrick Aichinger, Robert Steiner, Bianca Maria Wenigwieser
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Conceptualize supply chain designs, which are aligned with business models for manufacturing and service companies
• Configure logistics networks and assess their performance impacts on efficiency and service levels
• Manage inventory efficiently and pool inventory risks across time, products, channels, and geography.

Prerequisites:
Fundamentals of Marketing/Management

Lecture/Seminar profile:

Simultaneous Engineering (20_SIE3IL)

Degree course	IPM.ma
Course title	Simultaneous Engineering
Course code	20_SIE3IL
Level	Master
Term	WS25/26
Lecturer	Sven Kraus
Contact hours per week	1
ECTS credits	2
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Planning and monitoring of project portfolios
• Reporting in multiple-projects management
• Human resource management in multiple-projects management
• Case studies or practical projects relating to selected topics of the lecture

Prerequisites:
n.a.

Lecture/Seminar profile:

Technology Assessment (20_ZTA3IL)

Degree course	IPM.ma
Course title	Technology Assessment
Course code	20_ZTA3IL
Level	Master
Term	WS25/26
Lecturer	Heinz Riedelbauer
Contact hours per week	1
ECTS credits	1
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
• Introduction to technology intelligence methods and technology assessment (TA)
• TA-related design issues

Prerequisites:
n.a.

Lecture/Seminar profile:

Business Administration/Accounting (25_BWL1IL)

Degree course	IPM.ma
Course title	Business Administration/Accounting
Course code	25_BWL1IL
Level	Master
Term	WS25/26
Lecturer	Judith Frei
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
- Basic terminology and facts of economic management
- Types of organizations and their structural organization
- Core processes of organizations
- Balance sheets, salary and accounting
- Basics of macroeconomics

Prerequisites:
n.a.

Lecture/Seminar profile:

Digital Product Development (25_DPE1IL)

Degree course	IPM.ma
Course title	Digital Product Development
Course code	25_DPE1IL
Level	Master
Term	WS25/26
Lecturer	Christian Zehetner
Contact hours per week	2
ECTS credits	2
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
- Basics of the conceptualization and evaluation of product variants
- Computer based design and construction
- Concept-modelling technologies
- Modelling of free-form surfaces
- Technical prototype and model construction
- Virtual Prototyping and digital Mock-Ups
- Virtual and Augmented Reality

Prerequisites:
n.a.

Lecture/Seminar profile:

Design Visualization and Presentation I (25_EGD1IL)

Degree course	IPM.ma
Course title	Design Visualization and Presentation I
Course code	25_EGD1IL
Level	Master
Term	WS25/26
Lecturer	Michael Schwidefsky
Contact hours per week	1
ECTS credits	2
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
- In-depth display of alternative design processes
- Basic principles of design methods and display techniques
- Morphology (form, colour, surface, font)
- Training in perspective illustration
- Creation of renderings
- Basic principles of the software packages Photoshop and Illustrator

Prerequisites:
n.a.

Lecture/Seminar profile:

Design Visualization and Presentation I (25_EGD1SE)

Degree course	IPM.ma
Course title	Design Visualization and Presentation I
Course code	25_EGD1SE
Level	Master
Term	WS25/26
Lecturer	Markus Kretschmer
Contact hours per week	2
ECTS credits	2
Course type	Seminar
Examinations	continuous assessment
Language of instruction	English
Places for international students	2

Learning objectives:
n.a.

Content:
- In-depth display of alternative design processes
- Basic principles of design methods and display techniques
- Morphology (form, colour, surface, font)
- Training in perspective illustration
- Creation of renderings
- Basic principles of the software packages Photoshop and Illustrator

Prerequisites:
n.a.

Lecture/Seminar profile:

English (25_ENG1UE)

Degree course	IPM.ma
Course title	English
Course code	25_ENG1UE
Level	Master
Term	WS25/26
Lecturer	Douglas Vaught
Contact hours per week	1
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:
General English. Strong structural focus Grammar and vocabulary development (grammar review) Intensive ana-lytical language work related to all skills

Prerequisites:
n.a.

Lecture/Seminar profile:

Design Fundamentals (25_IND1IL)

Degree course	IPM.ma
Course title	Design Fundamentals
Course code	25_IND1IL
Level	Master
Term	WS25/26
Lecturer	Markus Kretschmer
Contact hours per week	1
ECTS credits	2
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
- Professional design terms
- Product language: terms and their practical meaning
- Design professions and activities Design processes
- Design history (overview)
- Interface expertise between product development, design, engineering, production and marketing

Prerequisites:
n.a.

Lecture/Seminar profile:

Innovation Management (25_INO1IL)

Degree course	IPM.ma
Course title	Innovation Management
Course code	25_INO1IL
Level	Master
Term	WS25/26
Lecturer	Kristiana Roth
Contact hours per week	3
ECTS credits	4
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
- Significance of technical innovation
- Objectives of R&D, technology management and innovation management
- Technology and innovation management process
- Overview and structure
- Functions and roles in technology and innovation management
- Success factors for technology and innovation management
- Stage-gate processes and evaluation methods

- Agile and hybrid innovation processes
- Innovation-promoting corporate organisation
- Initiation, development and evaluation of ideas (incl. open innovation)
- Principles of creativity (e.g. convergent & divergent thinking)
- Facilitation of (agile) creative processes (incl. creativity techniques)

Prerequisites:
n.a.

Lecture/Seminar profile:

Marketing Management (including MR) (25_MAK1IL)

Degree course	IPM.ma
Course title	Marketing Management (including MR)
Course code	25_MAK1IL
Level	Master
Term	WS25/26
Lecturer	Kristiana Roth
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	10

Learning objectives:
n.a.

Content:
- Basics of marketing research
- Process of marketing research
- Secondary research vs. primary research
- Qualitative research vs. Quantitative research
- Research design
- Information gathering and processing
- Selected methods of secondary research (market monitoring, competition analysis, press-, patent- and brand research, ...)
- Basic analytical processes of market research

- Strategic Marketing Management
- Basics of marketing
- Special aspects of marketing industrial goods
- Basic elements of conceptualization of marketing aspects and marketing process
- Situational analysis - Strategic marketing of industrial goods at an organizational level (mission statement, portfolio analysis)
- Competition strategy
- Timing strategy
- Basic internationalisation strategies
- Basic principles of product management

Prerequisites:
n.a.

Lecture/Seminar profile:

Mechatronics (25_MEC1IL)

Degree course	IPM.ma
Course title	Mechatronics
Course code	25_MEC1IL
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	5
ECTS credits	7
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	3

Learning objectives:
n.a.

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

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.

Consolidating the interplay of mechanical, electrical, electronic, microelectronic and sensor/actuator system components in connection with interface and display into a whole behaviour.

Prerequisites:
n.a.

Lecture/Seminar profile:

Product Management (25_PM1IL)

Degree course	IPM.ma
Course title	Product Management
Course code	25_PM1IL
Level	Master
Term	WS25/26
Lecturer	Alexander Brendel-Schauberger
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
-Analyzing-instruments
-Perceptual Maps
-Product Decisions
-Innovation
-Variation
-Differentiation
-Ellimination
-Service marketing

Prerequisites:
n.a.

Lecture/Seminar profile:

Project Management (25_PRM1VO)

Degree course	IPM.ma
Course title	Project Management
Course code	25_PRM1VO
Level	Master
Term	WS25/26
Lecturer	Markus Feistritzer
Contact hours per week	1
ECTS credits	1
Course type	Lecture
Examinations	oral or written examination
Language of instruction	English
Places for international students	10

Learning objectives:
n.a.

Content:
- Project management as a business process
- Project manual
- Methods for the management of projects
- o Methods for starting a project
- Project limitation and project context
- Design of the project organisation
- Project planning
- o Methods for project coordination
- o Methods for project controlling
- o Methods for project marketing
- o Methods for the management of project crises
- o Methods for project completion,
- Management of project-oriented organisations (overview)

Prerequisites:
n.a.

Lecture/Seminar profile:

Presentation (25_SKK1UE)

Degree course	IPM.ma
Course title	Presentation
Course code	25_SKK1UE
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	1
ECTS credits	2
Course type	Practice-oriented session
Examinations	continuous assessment
Language of instruction	English
Places for international students	6

Learning objectives:
n.a.

Content:
Different types and objectives of presentations
• Advantages and disadvantages of different presentation medias
• Rules of visualization (focus on layout of transparencies with special software features)
• Significance of eye contact, gesture/facial expression/ habitus linguistic and paralinguistic aspect for the success of presentations
• (Meeting) Moderation: repertoire, rules, asking techniques, visualization
• Positive association with excitement
• Effect of circumstances on the success
• How to write handouts
• Video training

Prerequisites:
n.a.

Lecture/Seminar profile:

Scientific Working (25_WIA1IL)

Degree course	IPM.ma
Course title	Scientific Working
Course code	25_WIA1IL
Level	Master
Term	WS25/26
Lecturer	Christiane Rau
Contact hours per week	0,5
ECTS credits	1
Course type	Integrated course
Examinations	oral or written examination
Language of instruction	English
Places for international students	3

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:
n.a.

Lecture/Seminar profile:

Project Work I (21_APR1PT)

Degree course	LCW.ma
Course title	Project Work I
Course code	21_APR1PT
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	0,5
ECTS credits	9
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	5

Learning objectives:
n.a.

Content:
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:

Project Work III (21_APR3PT)

Degree course	LCW.ma
Course title	Project Work III
Course code	21_APR3PT
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	0,5
ECTS credits	12
Course type	Project
Examinations	continuous assessment
Language of instruction	German/English
Places for international students	1

Learning objectives:
n.a.

Content:
Based on the results and/or findings of PR2, 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:

Solid Mechanics (21_KMK1UE)

Degree course	LCW.ma
Course title	Solid Mechanics
Course code	21_KMK1UE
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	2
Course type	Practice-oriented session
Examinations	oral or written examination
Language of instruction	German/English
Places for international students	1

Learning objectives:
n.a.

Content:
Basic concepts of linear and nonlieanr solid mechanics, continuum mechancis, deformation gradient, Euler and Lagrangian approach, stress tensors (Cauchy, Kirchhoff, etc.), strain tensors (Green, etc.), theory of linear elasticity, nonlinear material behaviour (e.g. non-linear elasticity, plasticity, viscoelasticity and visco-plasticity, etc.), damage mechanics, fatigue life calculation, fracture mechanics (LEBM, NLBM)
Exercises with practical examples

Prerequisites:
Mechanics and strength at the level of a tech. Bachelor study

Lecture/Seminar profile:

Solid Mechanics (21_KMK1VO)

Degree course	LCW.ma
Course title	Solid Mechanics
Course code	21_KMK1VO
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	German/English
Places for international students	1

Learning objectives:
n.a.

Content:
Basic concepts of linear and nonlieanr solid mechanics, continuum mechancis, deformation gradient, Euler and Lagrangian approach, stress tensors (Cauchy, Kirchhoff, etc.), strain tensors (Green, etc.), theory of linear elasticity, nonlinear material behaviour (e.g. non-linear elasticity, plasticity, viscoelasticity and visco-plasticity, etc.), damage mechanics, fatigue life calculation, fracture mechanics (LEBM, NLBM)
Exercises with practical examples

Prerequisites:
Mechanics and strength at the level of a tech. Bachelor study

Lecture/Seminar profile:

Selected Chapters Digital Factory (21_PDF1IL)

Degree course	LCW.ma
Course title	Selected Chapters Digital Factory
Course code	21_PDF1IL
Level	Master
Term	WS25/26
Lecturer	Stefan Hattinger
Contact hours per week	2
ECTS credits	3
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	1

Learning objectives:
n.a.

Content:
Digital Factory (DF) with a focus on Digital Manufacturing
Interrelationships between ERP, MES and PLM systems
Data integration and data management
Explanation of the sub-areas of DF
Analysis of production systems
Definition of application goals
Interpretation of expected results.

Prerequisites:
n.a.

Lecture/Seminar profile:

Solid Mechanics (22_MFK1UE)

Degree course	MB.ma
Course title	Solid Mechanics
Course code	22_MFK1UE
Level	Master
Term	WS25/26
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:
Basic concepts of NL mechanics of solid bodies -
Deformation gradient, Eulerian and Lagrangian approach, stress tensors (Cauchy, Kirchhoff, etc.), strain tensors (Green, etc.), linear elasticity theory, non-linear material behavior (e.g.: non-linear elasticity, plasticity, visco-elasticity and -plasticity, etc.), damage mechanics, service life calculation, fracture mechanics (LEBM, NLBM) Rehearsal exercises with practical examples of the content

Prerequisites:
n.a.

Lecture/Seminar profile:

Solid Mechanics (22_MFK1VO)

Degree course	MB.ma
Course title	Solid Mechanics
Course code	22_MFK1VO
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Basic concepts of NL mechanics of solid bodies -
Deformation gradient, Eulerian and Lagrangian approach, stress tensors (Cauchy, Kirchhoff, etc.), strain tensors (Green, etc.), linear elasticity theory, non-linear material behavior (e.g.: non-linear elasticity, plasticity, visco-elasticity and -plasticity, etc.), damage mechanics, service life calculation, fracture mechanics (LEBM, NLBM) Rehearsal exercises with practical examples of the content

Prerequisites:
n.a.

Lecture/Seminar profile:

Multibody Dynamics (22_MKS1VO)

Degree course	MB.ma
Course title	Multibody Dynamics
Course code	22_MKS1VO
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	4
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Kinematics: kinematics of rigid bodies, Rotation, relative-kinematics, holonomal and non-holonimal couplings in mechanical systems. Classification of multi-body-systems, Concepts of Degree-of-freedom, couplings, open- and closed Systems.
Kinetics: Newton / Euler equations, Lagrangian equations of motion (1. and 2. kind); Hamiltonian principle;
Dynamic system equations of multi-body-systems
Linearization of dynamic equations, Numerical solution procedures for dynamical systems
Bewegungsgleichungen von Mehrkörpersystemen. Introduction in functionality of Multi-body-system software and practical application of MBS-Software.

Prerequisites:
n.a.

Lecture/Seminar profile:

R&D Project (22_PRO3PT)

Degree course	MB.ma
Course title	R&D Project
Course code	22_PRO3PT
Level	Master
Term	WS25/26
Lecturer	GmBH BIS Meldung Korrektur (Nicht Exportiert)
Contact hours per week	1
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:

Dynamics (23_DYN1IL_Inc)

Degree course	MB.ma
Course title	Dynamics
Course code	23_DYN1IL_Inc
Level	Master
Term	WS25/26
Lecturer	Martin Egger
Contact hours per week	1,5
ECTS credits	3
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	15

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

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

Prerequisites:
n.a.

Lecture/Seminar profile:

Mechanics of Materials (23_MOM2IL_Inc)

Degree course	MB.ma
Course title	Mechanics of Materials
Course code	23_MOM2IL_Inc
Level	Master
Term	WS25/26
Lecturer	Christian Zehetner
Contact hours per week	1,5
ECTS credits	3
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	15

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

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

Prerequisites:
n.a.

Lecture/Seminar profile:

Applications of Hydrogen and Battery Technologies (24_AHB3LE)

Degree course	SES.ma
Course title	Applications of Hydrogen and Battery Technologies
Course code	24_AHB3LE
Level	Master
Term	WS25/26
Lecturer	Dominik Matheisl
Contact hours per week	4
ECTS credits	5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Application of Hydrogen technologies in different industries; Overview of Hydrogen storage methods; Overview of Hydrogen transport methods; Detailed discussion of selected storage methods; Detailed discussion of selected transport and distribution methods; Comparison of different methods to store and transport Hydrogen

Prerequisites:
Electrical Engineering, Renewables

Lecture/Seminar profile:

Energy Meteorology (24_ENM3IC)

Degree course	SES.ma
Course title	Energy Meteorology
Course code	24_ENM3IC
Level	Master
Term	WS25/26
Lecturer	Robert Höller
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:
Meteorological basics (air pressure, wind speed, temperature, radiation, structure of the atmosphere, aerosols and clouds, atmospheric dynamics)
Timescales of weather-related variability (diurnal, synoptic systems, sea-sonal fluctuations, climate-related variability)
Impact of weather-related variability on yield renewable energy production (wind energy, photovoltaic, solar thermal)
Statistical analysis of weather data
Simulation of weather-related variability of renewable energy production (wind energy, photovoltaic, solar thermal)
Climatology, climate variability, state of current knowledge
Climate databases for potential of renewable energies worldwide; Overview, background and comparison
Weather Forecast: historical development and state of the art, prediction accuracy.
Different methods for different spatial and temporal scales (nowcasting, short-term, medium-term, long-term fore-casts)
Numerical forecast models; "Downscaling", "post-processing" and statis-tical methods, chaos theory and ensemble prediction, limits of predictability

Prerequisites:
Electrical Engineering, Solar and Wind Energy

Lecture/Seminar profile:

Financing (24_FIN3IC)

Degree course	SES.ma
Course title	Financing
Course code	24_FIN3IC
Level	Master
Term	WS25/26
Lecturer	Andreas Gumpetsberger
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:
Contracting
Funding of projects on international degree
Financial assessment of international and national projects

Prerequisites:
none

Lecture/Seminar profile:

Operations Research for Energy Systems (24_ORE3IC)

Degree course	SES.ma
Course title	Operations Research for Energy Systems
Course code	24_ORE3IC
Level	Master
Term	WS25/26
Lecturer	Klaus Schiefermayr
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:
Simulation of heating, cooling and air-conditioning technology (HVAC);
Power plant simulation; Modeling of networked energy systems on system simulation with modeling in the field of energy conversion, transport and storage, integration of renewable energies into existing networks (e.g. load forecasts for estimating the required capacities for load management measures
and power/heat coupling); Lad forecasts for the estimation of the required capacities for load management measures and power/heat coupling); Control engineering for the optimization of processes and manufacturing methods; optimization of thermo-fluidic processes and cycles as well as heat transfer processes; Simulation of energy storage systems; Integration of renewable energies into local energy networks as well as optimal dimensioning of different energy storage systems; operations research; Energy-economic modeling and simulations

Prerequisites:
Electrical Engineering, Solar and Wind Energy

Lecture/Seminar profile:

Safety Aspects of Hydrogen and Batteries (24_SAH3IC)

Degree course	SES.ma
Course title	Safety Aspects of Hydrogen and Batteries
Course code	24_SAH3IC
Level	Master
Term	WS25/26
Lecturer	Tim Bieringer, Christina Toigo
Contact hours per week	3
ECTS credits	4
Course type	Integrated course
Examinations	continuous assessment
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
Safety regulations & risk assessment concerning handling, storage and transportation; Safety considerations and safety measures for hydrogen; Battery chemistry and types, battery management & thermal management;
Codes, standards and regulations for hydrogen and batteries; Case studies

Prerequisites:
Electrical Engineering, Renewables

Lecture/Seminar profile:

Solar Energy (24_SOL1LE)

Degree course	SES.ma
Course title	Solar Energy
Course code	24_SOL1LE
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
• Technical components
• Potential of solar radiation
• Introduction to PV systems
• Solar cells types
• Production of PV cells
• Properties of solar modules and generators
• DC and AC components
• Solar batteries
• Basic design and planning of PV grid-connected and island systems
• Energy yield estimation of solar systems
• Status of the technologies
• Potential of CO2 reduction
• Environmental impact

Prerequisites:
Electrical Energy Engineering

Lecture/Seminar profile:

Sustainable Development (24_SUS1IC)

Degree course	SES.ma
Course title	Sustainable Development
Course code	24_SUS1IC
Level	Master
Term	WS25/26
Lecturer	Aaron Sterniczky
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:
Introduction to the topic of Sustainable Development, Terms and Definitions, UN Sustainable Development Goals, Implementation of the UN goals, status quo and development scenarios, projects for implementing Sustainable Development in international comparison

Prerequisites:
none

Lecture/Seminar profile:

Wind Energy (24_WIN1LE)

Degree course	SES.ma
Course title	Wind Energy
Course code	24_WIN1LE
Level	Master
Term	WS25/26
Lecturer	
Contact hours per week	2
ECTS credits	2,5
Course type	Lecture
Examinations	written examination
Language of instruction	English
Places for international students	5

Learning objectives:
n.a.

Content:
• Wind potential
• Wind turbine types
• Wind turbine system concepts
• Structure and technical components of wind turbines
• Basic design and planning of wind farms
• Energy yield estimation of wind farms
• Status of the technologies
• Potential of CO2 reduction
• Environmental impact

Prerequisites:
Electrical Energy Engineering

Lecture/Seminar profile:

Project Work 1 (PRJ1PT_20)

Degree course	WFT.ma
Course title	Project Work 1
Course code	PRJ1PT_20
Level	Master
Term	WS25/26
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	1

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:

Project Work 3 (PRJ3PT_20)

Degree course	WFT.ma
Course title	Project Work 3
Course code	PRJ3PT_20
Level	Master
Term	WS25/26
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	1

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