Study regulations of the
FH Bachelor Degree

Energy & Sustainability Management

To obtain the academic degree

Bachelor of Arts in Business,
abbreviated BA

as an appendix to the statutes of the FH Kufstein Tirol

Organizational form: Full-time
Duration: 6 semesters
Scope: 180 ECTS
Places for beginners per academic year: 20 Full-time

Version 1
Decided by the FH Faculty Council on Mai 3rd 2023

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2 OCCUPATIONAL PROFILES

2.1 Occupational fields

Students have access to a wide variety of professional fields of activity thanks to the wide range of subjects covered by the qualification profile. The following fields of activity describe selected areas of application and tasks for which graduates of the Energy & Sustainability Management course qualify.

Energy Trading
Since the liberalization of the energy industry, energy trading has become increasingly important and trading volumes have increased continuously. New aspects such as virtual power plants and procurement communities are constantly emerging. In this context, portfolio management and the associated stock exchange and OTC trading forms a particular field of activity for experts in the energy industry. Its main tasks include researching and analyzing various market sectors of the wholesale energy markets and implementing the trading strategy defined by the company. In doing so, they use the market reports of consulting companies or support them in their preparation. In addition, graduates also work on marketing regional power plant capacities. This may concern, for example, the direct marketing of renewable energy systems along with the marketing of virtual power plants on the short-term and balancing energy markets.

Sales management for energy & sustainability
The energy turnaround and the digitalization of energy distribution, with the roll-out of smart meters to the smart grid, as industry-wide trends keep demanding new innovative business models. This is the only way for companies to successfully compete for end customers in supplying electricity and gas. Graduates are in demand as managers for product developments and product innovations in the field of electricity and natural gas. On the way to a market-ready product, they are responsible for potential analyses and support the creation of business cases and marketing strategies. In this context, customer insights are playing an increasingly important role in identifying and analyzing market trends and customer needs in order to develop sustainable digital business models.

Energy & Sustainability Consulting
Energy consulting and, subsequently, energy services are playing an increasingly important role in the energy sector and industry due to the national and EU-wide energy efficiency targets. Consultants' fields of activity primarily include working on customer projects with a focus on sustainability management. Their tasks include the identification of site specifics and process recording with digital methods in order to develop innovative solutions and concepts for measures in the field of energy efficiency and energy services from the data obtained. Consultants are guided by standards and procedures such as ISO 50001 and ISO 14001. Furthermore, the consultants form the interface to the customer, to whom they present solutions and products and are also available as contact people for all project-related issues.
The sustainable design of mobility is playing an increasingly important role in the sense of a holistic energy concept. Graduates are involved in developing innovative mobility concepts.

Municipal Sustainability Management
The establishment of regional-decentralized, regenerative energy supply and the expansion of the Smart Grid enable entirely new regional energy concepts. Graduates develop sustainable solutions for future regional energy and mobility supply. They implement sustainable refurbishment concepts in the building sector. Special attention is paid to an integrated energy supply of municipalities with electricity, heating and cooling.
The demand for graduates comes from regional energy suppliers, energy advice centers and the municipal administration.

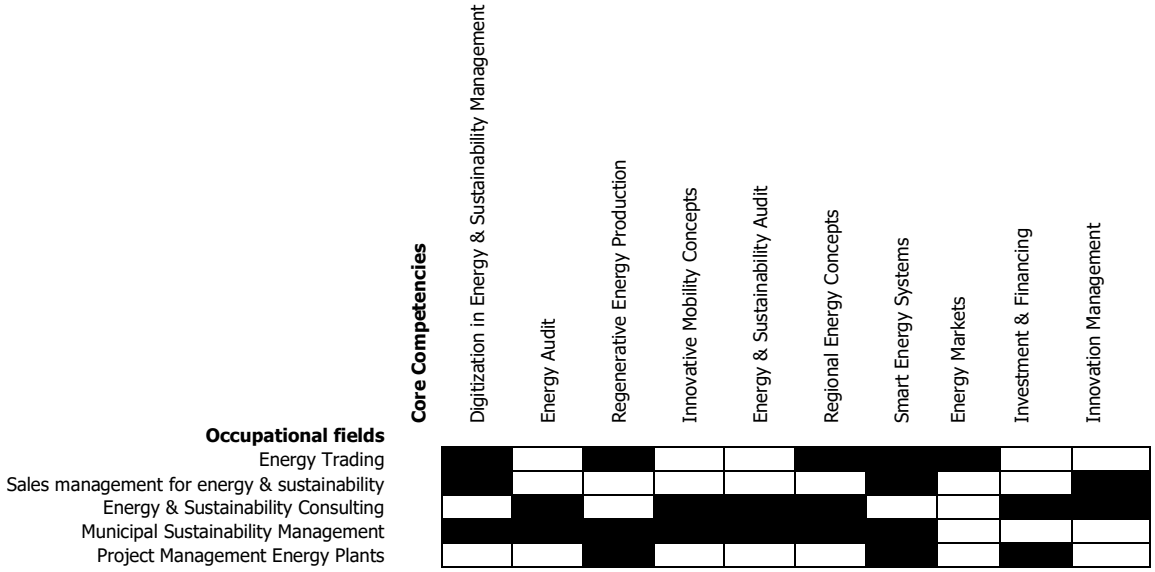
Project Management Energy Plants
The construction along with the optimization of decentralized energy generation plants, i.e. plants for combined heat and power generation and renewable energies, is playing an increasingly important role in the course of the energy turnaround. The tasks of experts in the field of energy management and sustainability include the implementation and preparation of site analyses, demand analyses and energy concepts. The main focus lies on the economic comparison and sustainability aspects of different generation technologies as a basis for the development of a project. In addition, the experts also take on the coordination of interdisciplinary project teams, where the focus lies on the management of internal project interfaces with regard to technical, business-related and legal work packages.

2.2 Qualification profile

The qualification aims and learning outcomes of the Bachelor degree program in Energy & Sustainability Management correspond both to the academic and professional requirements and to *ISCED level 0788*[1] (International Standard Classification of Education). The contents conveyed qualify the graduates for the professional fields of activity mentioned in the previous chapters. The main focus of the course lies in the fundamental technical, economic and legal contexts of the industry as well as in imparting knowledge of quantitative and qualitative approaches in the field of scientific methods for the implementation and application of business-related and academic problems, analyses and research work. In particular, methods and concepts that are generally necessary for solving problems in the energy industry, energy technology and in the sustainability sector are dealt with. In addition, there are complementary skills in the Social Skills and Foreign Languages modules. The application of specialist knowledge and feedback from current practice and research takes place in the practical transfer module with practical projects and the professional internship. Integration and transfer from the field of research takes place within the framework of the module Scientific and Empirical Methods on the one hand and the two modules Practice Project I/II on the other.

The following matrix is intended to serve as a graphic representation for Table 4, which lists the occupational fields of activity with the required competences (black fields).

[1] *Example 4: A program consisting of 40% engineering (071), 30% business (041) and 30% languages (023) should be classified as 0788 ("Inter-disciplinary programs and qualifications involving engineering, manufacturing and construction") as no field predominates but 07 is the leading broad field. If engineering and business were equally important and greater than languages (e.g. 40%, 40% and 20%), the program would be classified as either 0788 or 0488 depending on which program, engineering (071) or business (041), is listed first in the program title (or, if not in the title, in the curriculum or syllabus).*



The following table shows the respective occupational fields of activity and their defined tasks as well as the associated competences. The corresponding modules are assigned to the listed competences.

3 CURRICULUM

3.1 Curriculum Data

	FT	Comment if applicable
First year of study (YYY/YY_{+1})	2023/24	
Standard duration of study (number of semesters)	6	
Obligatory WSH (Total number for all sem.)	64	In the FT program, a semester abroad with weekly semester hours of the respective partner universities takes place within the specified weekly semester hours.
Course weeks per semester (number of weeks)	15	
Obligatory course hours (Total for all sem.)	960	In the full-time program, a semester abroad with contact hours of the respective partner universities takes place within the specified weekly semester hours.
Obligatory ECTS (Total for all sem.)	180	
WS start (Date, comm.: poss. CW)	CW 40	
WS end (Date, comm.: poss. CW)	CW 7	
SS start (Date, comm.: poss. CW)	CW 10	
SS end (Date, comm.: poss. CW)	CW 28	
WS weeks	15	
SS weeks	15	

Obligatory semester abroad (semester specification)	3rd semester	

Language of instruction (specify)	German/English	The proportion of English-language courses amounts to 22.73% of the WSH
Professional internship (semester, duration in weeks - at 40 hours per week - per semester)	6th semester 12 weeks	

3.2 Curriculummatrix

The following description of the modules does not include the work involved in supervising Bachelor theses. 0.2 weekly semester hours are planned per supervised thesis, i.e. for 20 students an additional 4 thesis weekly semester hours, which are incurred in the 6th semester. In total, an AWSH sum of 101.11 AWSH is achieved over all 6 semesters.

Depending on the learning and teaching method, group divisions are necessary within the individual modules. Since these are usually not valid for the entire module, the curriculum matrix gives the mean value of the number of groups, weighted according to the ratio of learning and teaching methods with and without group divisions. Modularization

1. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
ENM.1	Fundamentals of Energy & Sustainability Management	ILV			30 %	3	1	3	45	ENM	6
SPR.1	Foreign Language I	ILV			0 %	4.5	2	9.0	135.0	SPR.1	6
TEC.1	Fundamentals of Energy Technology	ILV	X		30 %	3	1	3	45	TEC.1	6
TEC.2	Principles of Electrical Engineering	ILV	X		30 %	3	2	6	90	TEC.2	6
WIS.1	Scientific and Empirical Methods	ILV			50 %	3	1	3	45	WIS.1	6
Total line:						16.5		24.0	360.0		30
Course hours = Total WSH x course weeks						247.5					

2. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
DIT	Digitization in Energy & Sustainability Management (E)	ILV	X	X	30 %	2	1	2	30	DIT	4
ECO.1	Fundamentals of Business Administration & Economics (E)	ILV		X	30 %	4	1	4	60	ECO.1	6
ECO.4	Investment & Finance for Energy & Sustainability Management (E)	ILV		X	30 %	2	1	2	30	ECO.4	4
SPR.2	Foreign language II	ILV			0 %	4.5	2	9.0	135.0	SPR.2	6
TEC.3	Regenerative energy production	ILV	X		30 %	5	1	5	75	TEC.3	10
Total line:						17.5		22.0	330.0		30
Course hours = Total WSH x course weeks						262.5					

3. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
ECO.3	Selected Topics Business Administration	ILV			0 %	0	1	0	0	ECO.3	8
SOC.1	Selected Topics Social skills and Presentation	ILV			0 %	0	1	0	0	SOC.1	7
VWL	Selected Topics Economics	ILV			0 %	0	1	0	0	VWL	10
WIS.2	Selected Topics on Scientific and Empirical Methods	ILV			0 %	0	1	0	0	WIS.2	5
Total line:						0		0	0		30
Course hours = Total WSH x course weeks						0					

4. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
AUD.1	Sustainability Assessment	ILV	X		30 %	2.5	1	2.5	37.5	AUD.1	5
EWI	Energy Markets	ILV			30 %	2	1	2	30	EWI	4
IMK	Innovative Mobility Concepts	ILV	X		30 %	3	1	3	45	IMK	6
PRX.1	Project Management & Practical Project I	ILV	X		15 %	3	2	6	90	PRX.1	6
TEC.5	Smart energy systems	ILV	X		30 %	4.5	1	4.5	67.5	TEC.5	9
Total line:						15.0		18.0	270.0		30
Course hours = Total WSH x course weeks						225.0					

5. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
AUD.2	Energy & Sustainability Audit	ILV	X		30 %	4.5	1	4.5	67.5	AUD.2	9
DEV	International Energy & Sustainability Development - Project (E)	PT	X	X	20 %	3	2	6	90	DEV	6
ECO.2	Innovation Management (E)	ILV	X	X	30 %	2.5	2	5.0	75.0	ECO.2	5
PRX.2	Practice Transfer & Practical Project II	ILV	X		0 %	2.5	2	5.0	75.0	PRX.2	5
TEC.4	Regional Energy Concepts	ILV	X		30 %	2.5	1	2.5	37.5	TEC.4	5
Total line:						15.0		23.0	345.0		30
Course hours = Total WSH x course weeks						225.0					

6. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
PRX.3	Internship & Business Personality Development	ILV	X		100 %	0.5	1	0.5	7.5	PRX.3	20
WIS.3	Bachelor Thesis Seminar	SE	X		50 %	0.5	1	0.5	7.5	WIS.3	10
Total line:						1.0		1.0	15.0		30
Course hours = Total WSH x course weeks						15.0					

Abbreviations	
eLV	E-learning proportion of course in percent
E	Lecture in English language
ECTS	ECTS – Credit points
LV	Course
LVS	Course hour(s)
WSH	Weekly semester hour(s)
T	Lecture with technical background
WP	Elective subject

Summary curriculum data

Description	**WSH**	**ASWS**	**ALVS**	**ECTS**
Total number of courses over all semesters	65	88	1320	180
Total number of courses in 1st year of study	34	46	690	60
Total number of courses in 2nd year of study	15	18	270	60
Total number of courses in 3rd year of study	16	24	360	60
Total number of technical events over all semesters	42			112
Percentage of technical courses over all semesters based on WSH / ECTS	64.62 %			62.22 %
Total number of courses in English over all semesters	13.5			25
Proportion of courses in English over all semesters based on WSH / ECTS	24.11 %			14.88 %
Proportion of eLearning units over all semesters based on WSH / ECTS	25.15 %			30.89 %

3.3 Module descriptions

Module number:	**Fundamentals of Energy & Sustainability Management**	**Scope:**	
ENM		**6**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	1. Semester		
Level	1. Semester: Introduction		
Previous knowledge	1. Semester: none		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Fundamentals of Energy & Sustainability Management /ILV / LV-Nr: ENM.1 / 1.Semester / ECTS: 6 • Joos, F., 2019. Nachhaltige Energieversorgung. Wiesbaden: Springer Fachmedien • Konstantin, P., 2017. Praxisbuch Energiewirtschaft: Energieumwandlung, -transport und -beschaffung im liberalisierten Markt. 4th edition. Berlin: Springer-Verlag • Klees A., 2012. Einführung in das Energiewirtschaftsrecht. Deutscher Fachverlag • Hering, E. und Schultz, W., 2018. Umweltschutztechnik und Umweltmanagement: Ein Kompendium für Studierende, Praktiker und Politiker. Wiesbaden: Springer Vieweg • Förtsch, G. and Meinholz, H., 2018. Handbuch Betriebliches Umweltmanagement. Wiesbaden: Springer Vieweg • Ennöckl, D., Raschauer, W., Wessely, W., 2019. Handbuch Umweltrecht. Vienna: Facul-tas • Brugger-Gebhardt, S., 2016. Die DIN EN ISO 9001:2015 verstehen: Die Norm sicher interpretieren und sinnvoll umsetzen. Berlin: Springer Gabler		
Acquisition of skills	Fundamentals of Energy & Sustainability Management /ILV / LV-Nr: ENM.1 / 1.Semester / ECTS: 6 The students are able to: • Name basic terms of the energy industry and sustainability • Classify developments in the energy industry and sustainability • Describe and compare global, national, regional and corporate sustainability goals in an exemplary manner • Name goals and actors in energy and environmental law • Assign energy and environmental legislation and regulations at national and European level to the appropriate bodies		
Course contents	Fundamentals of Energy & Sustainability Management /ILV / LV-Nr: ENM.1 / 1.Semester / ECTS: 6 • Historical development and future challenges of the energy industry, environmental protection and sustainability • Stakeholders of the energy industry, environmental protection and sustainability • Ecological, economic and social aspects of sustainability • Basic concepts of the energy industry •- UN Sustainability Goals as well as exemplary national, regional sustainability goals and sustainability objectives of companies • Basics of quality management according to ISO 9001 • Structure and organization of a quality management system • Definition of quality in relation to Energy & Sustainability Management • Guidelines of European energy and environmental policy • Guidelines and fundamentals of energy and environmental law • Promotion of renewable energies and sustainable developments		
Teaching and learning methods	Fundamentals of Energy & Sustainability Management /ILV / LV-Nr: ENM.1 / 1.Semester / ECTS: 6 Blended Learning		
Evaluation Methods Criteria	Fundamentals of Energy & Sustainability Management /ILV / LV-Nr: ENM.1 / 1.Semester / ECTS: 6 Written Exam		

Module number:	**Foreign Language I**	**Scope:**	
SPR.1		**6**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	1. Semester		
Level	1. Semester: A1-A2, B1-B2, B2-C1, C1-C2 (CEFR) depending on the module		
Previous knowledge	1. Semester: - Modules at levels A1-A2: No prior knowledge of the target language and a secure B2 level in English - Modules at levels B1-B2: Secure A2 level in the target language or recommendation of support measures and secure B2 level in English - Modules at levels B2-C1: Secure B1 level in English or recommendation of support measures - Modules at levels C1-C2: Secure B2 level in English		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Foreign Language I /ILV / LV-Nr: SPR.1 / 1.Semester / ECTS: 6 Coursebook - by arrangement; authentic materials, e.g., journals (including specialist journals), newspapers, and online media in the target language		
Acquisition of skills	Foreign Language I /ILV / LV-Nr: SPR.1 / 1.Semester / ECTS: 6 The modules are designed according to the Common European Framework of Reference for Languages (CEFR). Within the framework of the modules, the students will acquire the language and communication skills required for business-oriented professional or academic activity. The following competencies are taught according to the CEFR, i.e., after completion of the module, successful graduates will have mastered the following skills in the target language: A1-A2 Basic communication skills B1-B2 Advanced use of the language and communication skills B2-C1 Independent language use to expert communication skills C1-C2 Expert language skills to fluent, competent communication skills		
Course contents	Foreign Language I /ILV / LV-Nr: SPR.1 / 1.Semester / ECTS: 6 The language modules integrated into the degree program curriculum are designed according to the methodological principles of a communicative, action-oriented approach. The competence levels of the modules are based on the Common European Framework of Reference for Languages (CEFR), and a central objective is that students increase their communication skills by at least one level. In addition, there is a clear focus on acquiring academic and business-oriented skills in the target language. • A1-A2 Basic communication skills • B1-B2 Advanced use of the language and communication skills • B2-C1 Independent language use to expert communication skills • C1-C2 Expert language skills to fluent, competent communication skills		
Teaching and learning methods	Foreign Language I /ILV / LV-Nr: SPR.1 / 1.Semester / ECTS: 6 Blended Learning		
Evaluation Methods Criteria	Foreign Language I /ILV / LV-Nr: SPR.1 / 1.Semester / ECTS: 6 Portfolio with various components: • Various assessments (reading comprehension, listening comprehension, written expression, oral expression) • Various tasks and documentation of achievements, including contributions to group work, course units, and critical reflection on learning outcomes		

Module number:	**Fundamentals energy technology**	**Scope:**	
TEC.1		**6**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	1. Semester		
Level	1. Semester: Introduction		
Previous knowledge	1. Semester: none		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Fundamentals of Energy Technology /ILV / LV-Nr: TEC.1 / 1.Semester / ECTS: 6 • Mortimer, C. E. and U. Müller, 2015. Chemie: Das Basiswissen der Chemie. 12th edition Stuttgart: Thieme Verlag • Herr, H., E. Bach and U. Maier, 2011. Technische Physik. 5th edition, Haan: Europa-Lehrmittel • Cerbe, G. und G. Wilhelms, 2013. Technische Thermodynamik. 17th edition. Munich: Carl Hanser • Bohl, W., 2014. Technische Strömungslehre. 15th edition. Würzburg: Vogel Business Media • Böge, A., W. Böge and 2017. Technische Mechanik. 32nd edition. Wiesbaden: Springer Vieweg		
Acquisition of skills	Fundamentals of Energy Technology /ILV / LV-Nr: TEC.1 / 1.Semester / ECTS: 6 The students are able to: • Understand the theory of chemical reactions and equilibria as well as electrochemis-try • Know and assess the heat of combustion, exhaust gas quantities and storage capac-ities • Describe and apply the basic terms force, momentum, power and energy • Apply the conservation laws of mechanics and thermodynamics • Apply the basic laws of thermodynamics and fluid mechanics to questions of energy technology • Understand energy conversion processes and calculate technical parameters		
Course contents	Fundamentals of Energy Technology /ILV / LV-Nr: TEC.1 / 1.Semester / ECTS: 6 Electrochemistry: • Elementary types of chemical bonding • Stoichiometry of reaction products and reaction products • Combustion calculation • Electrochemistry Mechanics: • Mechanical principles of force balance and energy conservation Thermodynamics: • Thermodynamics of ideal and real gases (equations of state, theorems) • Cyclic processes of thermodynamics with emphasis on the water-steam cycle • Mechanisms of heat transfer and their technical use • Basic concepts of hydrostatics and hydrodynamics		
Teaching and learning methods	Fundamentals of Energy Technology /ILV / LV-Nr: TEC.1 / 1.Semester / ECTS: 6 Blended Learning		
Evaluation Methods Criteria	Fundamentals of Energy Technology /ILV / LV-Nr: TEC.1 / 1.Semester / ECTS: 6 Written Exam		

Module number:	**Fundamentals of electrical engineering**	**Scope:**	
TEC.2		**6**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	1. Semester		
Level	1. Semester: Introduction		
Previous knowledge	1. Semester: none		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Principles of Electrical Engineering /ILV / LV-Nr: TEC.2 / 1.Semester / ECTS: 6 • Tkotz, K., 2018. Fachkunde Elektrotechnik. 31. Auflage. Haan: Europa-Lehrmittel • Hagmann, G., 2019. Grundlagen der Elektrotechnik. 18. Auflage. Wiebelsheim: AULA-Verlag		
Acquisition of skills	Principles of Electrical Engineering /ILV / LV-Nr: TEC.2 / 1.Semester / ECTS: 6 The students are able to: • Reproduce and explain definitions of current and voltage, electric and magnetic field as well as Ohm's law and electromagnetic induction • Describe quantum mechanical processes of charge transport in electric semiconduc-tors qualitatively and apply them to the photoelectric effect • Read plans and data sheets of electric power engineering • Understand basic principles of control systems and interpret the parameters of direct, alternating and three-phase current • Describe the function and operating behavior of electrical machines • Set up electrical circuits in the laboratory, operate measuring equipment and visual-ize measurement results • Question and analyze the technical interrelationships of an extensively described and delimited task in the field of electrical engineering and reproduce a solution with a given structure		
Course contents	Principles of Electrical Engineering /ILV / LV-Nr: TEC.2 / 1.Semester / ECTS: 6 • Kirchhoff's laws • Basic quantities of alternating current and three-phase current • Reactive, active and apparent power • Applications of semiconductors in metrology, digital technology and power electronics • Description of electrical machines, motors and generators by pointer diagrams • Asynchronous and synchronous machines • Properties and structures of control loops • Definition of current and voltage • Electric and magnetic field • Theory of electrical conduction in doped electrical semiconductors • Photoelectric effect • Practical experimental setups in the laboratory The module is made up of 67% exercises. This form of teaching takes place in small groups.		
Teaching and learning methods	Principles of Electrical Engineering /ILV / LV-Nr: TEC.2 / 1.Semester / ECTS: 6 Blended Learning and exercises		
Evaluation Methods Criteria	Principles of Electrical Engineering /ILV / LV-Nr: TEC.2 / 1.Semester / ECTS: 6 Written Exam		

Module number:	**Scientific & empirical methods**	**Scope:**	
WIS.1		**6**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	1. Semester		
Level	1. Semester: Introduction		
Previous knowledge	1. Semester: Blended Learning		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Scientific and Empirical Methods /ILV / LV-Nr: WIS.1 / 1.Semester / ECTS: 6 • Heisen, M. R. und M. Theisen 2021. Wissenschaftliches Arbeiten: erfolgreich bei Bachelor- und Masterarbeit. München: Franz Vahlen • Bourier, G., 2018. Beschreibende Statistik: Praxisorientierte Einführung – Mit Aufgaben und Lösungen. 13. Auflage. Wiesbaden: Springer Gabler • Fahrmeir, L., R. Künstler, I. Pigeot, I. und G. Tutz, 2012. Statistik: Der Weg zur Datenanalyse. 7. Auflage. Berlin: Springer • Fahrmeir, L., Kneib, T. & Lang, S., 2009. Regression: Modelle, Methoden und Anwendungen. 2. Auflage. Berlin: Springer		
Acquisition of skills	Scientific and Empirical Methods /ILV / LV-Nr: WIS.1 / 1.Semester / ECTS: 6 The students are able to: • Describe and apply the fundamentals of academic work • Research, evaluate and quote specialist literature • Present and apply academic methods of literature analysis • Understand and apply concepts and methods of descriptive and explorative statistics		
Course contents	Scientific and Empirical Methods /ILV / LV-Nr: WIS.1 / 1.Semester / ECTS: 6 • Principles of academic and scientific work o Science and scientific language o Literature research o Citation and source work o Avoidance of plagiarism • Principles of descriptive and explorative statistics o statistical characteristics and variables o univariate and multivariate descriptive and explorative statistics o index numbers o correlation and regression analyses o concentration measurement o time series analysis The module contains 25% exercises. This form of teaching takes place in small groups.		
Teaching and learning methods	Scientific and Empirical Methods /ILV / LV-Nr: WIS.1 / 1.Semester / ECTS: 6 Blended Learning		
Evaluation Methods Criteria	Scientific and Empirical Methods /ILV / LV-Nr: WIS.1 / 1.Semester / ECTS: 6 Term paper and written exam		

Module number:	**Digitization in Energy & Sustainability Management**	**Scope:**	
DIT		**4**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	2. Semester		
Level	2. Semester: Consolidation		
Previous knowledge	2. Semester: Scientific and Empirical Methods (WIS.1)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Digitization in Energy & Sustainability Management (E) /ILV / LV-Nr: DIT / 2.Semester / ECTS: 4 • Grus, J., 2016. Einführung in Data Science: Grundprinzipien der Datenanalyse mit Python. Sebastopol: O'Reilly Media • Fasel, D., A. Meier, 2016. Big Data: Grundlagen, Systeme und Nutzungspotentiale. Wiesbaden: Springer Verlag • Runkler, T.A., 2016. Data Analytics: Models and Algorithms for Intelligent Data Analysis. 2. Auflage. Wiesbaden: Springer Verlag		
Acquisition of skills	Digitization in Energy & Sustainability Management (E) /ILV / LV-Nr: DIT / 2.Semester / ECTS: 4 The students are able to: • Describe contents, results/applications and working methods of Data Science • Apply basic functions in the processing of mass data including evaluation functions • Describe basic concepts of programs for evaluating large quantities of data and independently create simple program codes for evaluations - Apply tools for the evaluation of data		
Course contents	Digitization in Energy & Sustainability Management (E) /ILV / LV-Nr: DIT / 2.Semester / ECTS: 4 • Evaluation of measurement data • Fundamentals of time series analysis • Data protection and data security		
Teaching and learning methods	Digitization in Energy & Sustainability Management (E) /ILV / LV-Nr: DIT / 2.Semester / ECTS: 4 Blended Learning		
Evaluation Methods Criteria	Digitization in Energy & Sustainability Management (E) /ILV / LV-Nr: DIT / 2.Semester / ECTS: 4 Examination and portfolio		

Module number:	Fundamentals of Business Administration & Economics	Scope:	
ECO.1		6	ECTS
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	2. Semester		
Level	2. Semester: Introduction		
Previous knowledge	2. Semester: none		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Fundamentals of Business Administration & Economics (E) /ILV / LV-Nr: ECO.1 / 2.Semester / ECTS: 6 • Vahs, D. und J. Schäfer-Kunz, 2015. Einführung in die Betriebswirtschaftslehre. 7. Auflage. Stuttgart: Schäffer Poeschel. • Thommen, J.-P. et al., 2017. Allgemeine Betriebswirtschaftslehre: Umfassende Einführung aus managementorientierter Sicht. 8. Auflage. Wiesbaden: Springer Gabler. • Schweitzer, M. und A. Baumeister, 2015. Allgemeine Betriebswirtschaftslehre. 11. Auflage. Berlin: Erich Schmidt Verlag. • Hutzschenreuter, T., 2015. Allgemeine Betriebswirtschaftslehre. 6. Auflage. Wiesbaden: Springer Gabler. • Wöhe, G., U. Döring und G. Brösel, 2016. Einführung in die Allgemeine Betriebswirtschaftslehre, 26. Auflage. München: Vahlen. • Weber, W., R. Kabst und M. Baum, 2018: Einführung in die Betriebswirtschaftslehre, 10. Auflage. Wiesbaden: Springer Gabler. • Pindyck, R. S. und D. L. Rubinfeld, 2018. Mikroökonomie. Pearson Deutschland GmbH • Varian, H. R., 2014. Grundzüge der Mikroökonomik. Berlin: Walter de Gruyter GmbH & Co KG.Deutschland GmbH. • Münter, M.T., 2018. Mikroökonomie, Wettbewerb und strategisches Verhalten. Stuttgart: UTB GmbH • Natrop, J., 2012. Grundzüge der angewandten Mikroökonomie. Berlin: Walter de Gruyter GmbH & Co KG.Deutschland GmbH. • Kahneman, D., 2012. Schnelles Denken, langsames Denken. München: Siedler Verlag. • Rifkin, J., 2014. Die Null-Grenzkosten-Gesellschaft: Das Internet der Dinge, kollaboratives Gemeingut und der Rückzug des Kapitalismus. Frankfurt am Main: Campus Verlag. • Thiel, P., und B. Masters, 2014. Zero to one: Wie Innovation unsere Gesellschaft rettet. Frankfurt am Main: Campus Verlag. • Buchholz, L. und R. Gerhards, 2016. Internes Rechnungswesen, Kosten- und Leistungsrechnung, Betriebsstatistik und Planungsrechnung. Wiesbaden: Springer Gabler • Deimel, K. et al., 2017. Kostenrechnung, Das Lehrbuch für Bachelor, Master und Praktiker. Hallbergmoos: Pearson • Geirhofer, S. und C. Hebrank, 2016. Grundlagen Buchhaltung und Bilanzmanagement, 4. Auflage. Wien: Linde Verlag. • Coenenberg, A.G. et. al., 2018. Einführung in das Rechnungswesen: Grundlagen der Buchführung und Bilanzierung, 7. Auflage. Stuttgart: Schäffer Poeschel • Wedell, H. und A.A. Dilling, 2018. Grundlagen des Rechnungswesens, 16. Auflage. Herne: NWB Studium • Breidenbach, K. und M. Währisch, 2017. Buchhaltung und Jahresabschluss, 4. Auflage. Berlin: De Gruyter Studium • Schmidt, M., B. Auer und P. Schmidt, 2012. Buchführung und Bilanzierung: Eine anwendungsorientierte Einführung. Wiesbaden: Springer Gabler		
Acquisition of skills	Fundamentals of Business Administration & Economics (E) /ILV / LV-Nr: ECO.1 / 2.Semester / ECTS: 6 The students are able to: • Describe different business-related subareas • Explain the fundamentals of marketing • Explain the fundamentals of human resources management • Explain the structure of a company, typical operational processes and the basic constitutive factors of a company. • Recognize relationships in the sense of the various relationships between business functions • Clearly differentiate central business terms from each other • Explain the most important constitutional and functional corporate decisions. • Handle fundamental management problems from an economic point of view • Analyze decisions under uncertainty • Develop strategic decisions on the basis of economic models • Assess the impact of digital technologies and products on a company's cost struc-ture and the formation of market forms • Explain the fundamentals of mapping business decisions in the accounting system. • Explain basic terms and sub-areas of accounting • Understand the technique and internal structure of double-entry bookkeeping and assess the structure of an accounting system and the characteristics of different types of accounts • Make simple business postings to balance sheet and profit and loss accounts and create posting records • Identify the significant effects of business transactions on the balance sheet and income statement • Explain task fields and solution approaches of cost and revenue accounting with its subsystems (cost element, cost center and cost unit accounting) • Distinguish between the terms deposits, disbursements, income, expenses and income • Explain the organizational structure of a cost accounting system and explain the main features of the main cost accounting systems • Explain the systems of cost accounting (partial and full cost accounting)		
Course contents	Fundamentals of Business Administration & Economics (E) /ILV / LV-Nr: ECO.1 / 2.Semester / ECTS: 6 • Overview and context analysis of the most important subareas in business admin-istration • Subject and fundamentals of business administration: o Operational functional areas o Business-related decision theory		

	o Fundamentals of management and ethics o Fundamentals of Human Resources and organization
Course contents	o Marketing fundamentals • Fundamentals of business-related management: o Constitutive company decisions such as legal forms, location decisions, types of mergers and acquisitions and choice of business segment o Functional company decisions: Materials management, production management, marketing • Fundamentals of business value creation processes and functions (value creation architecture and structure) • Fundamentals of market-, process- and strategy-oriented management • Microeconomics and the behavior of managers and companies • Price and product policy of companies • Elementary principles of game theory • Company organization • Market forms and market entry • Decisions under uncertainty • Behavioral economics • Economy of digitization • External accounting: o Structure of the accounting system o Fundamentals of operational accounting: Tasks, sub-areas and basic concepts o Commercial accounting system: From inventory to opening balance sheet o Double-entry accounting system: Posting business cases to inventory and profit and loss accounts o Organization of bookkeeping (chart of accounts, sales tax, etc.) o Principle of period purity and accruals and deferrals • Internal accounting: o Objectives and basic concepts of cost and revenue accounting o Fundamentals of cost and revenue accounting: Tasks, components and subareas o Structure of cost accounting (cost elements, cost centers, cost objects) o Contribution margin accounting
Teaching and learning methods	Fundamentals of Business Administration & Economics (E) /ILV / LV-Nr: ECO.1 / 2.Semester / ECTS: 6 Blended Learning
Evaluation Methods Criteria	Fundamentals of Business Administration & Economics (E) /ILV / LV-Nr: ECO.1 / 2.Semester / ECTS: 6 Written Exam

Module number:	**Investment & Finance for Energy & Sustainability Management**	**Scope:**	
ECO.4		**4**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	2. Semester		
Level	2. Semester: Consolidation		
Previous knowledge	2. Semester: Fundamentals of Business Administration & Economics (ECO.1)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Investment & Finance for Energy & Sustainability Management (E) /ILV / LV-Nr: ECO.4 / 2.Semester / ECTS: 4 • Olfert, K., 2015. Investition. 13. Auflage. Herne: Friedrich Kiehl Verlag • Däumler, K. D. und J. Grabe, 2014. Grundlagen der Investitions- und Wirtschaftlichkeitsrechnung. 13. Auflage. Herne: NWB Verlag • Hack, M., 2015. Energie Contracting: Energiedienstleistungen und dezentrale Energieversorgung. 3. Auflage. München: C.H. Beck Verlag		
Acquisition of skills	Investment & Finance for Energy & Sustainability Management (E) /ILV / LV-Nr: ECO.4 / 2.Semester / ECTS: 4 The students are able to: • Name key business profitability figures • Discuss investment decisions in projects and other economic decision alternatives • Explain procedures of business valuation and options of contract design with differ-ent types of services between provider and customer • Name methods of carrying out economic evaluations		
Course contents	Investment & Finance for Energy & Sustainability Management (E) /ILV / LV-Nr: ECO.4 / 2.Semester / ECTS: 4 • Investment decision as a process in the entrepreneurial environment • Static and dynamic procedures of investment calculation • Profitability ratios of the profitability calculation • Case studies of investments in the generation and distribution grid sector as well as in sales and customer projects • Energy and environmental protection services from the supplier and customer point of view • Contract design of different service models		
Teaching and learning methods	Investment & Finance for Energy & Sustainability Management (E) /ILV / LV-Nr: ECO.4 / 2.Semester / ECTS: 4 Blended Learning		
Evaluation Methods Criteria	Investment & Finance for Energy & Sustainability Management (E) /ILV / LV-Nr: ECO.4 / 2.Semester / ECTS: 4 Written exam		

Module number:	**Foreign Language II**	**Scope:**	
SPR.2		**6**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	2. Semester		
Level	2. Semester: A1-A2, B1-B2, B2-C1, C1-C2 (CEFR) depending on the module		
Previous knowledge	2. Semester: - Modules at levels A1-A2: Foreign Language I in the target language at levels A1-A2 and a secure B2 level in English - Modules at levels B1-B2: Foreign Language I in the target language at levels B1-B2 and a secure B2 level in English - Modules at levels B2-C1: Foreign Language I in the target language at levels B1-B2 - Modules at levels C1-C2: Foreign Language I in the target language at levels C1-C2		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Foreign language II /ILV / LV-Nr: SPR.2 / 2.Semester / ECTS: 6 Coursebook - by arrangement; authentic materials, e.g., journals (including specialist journals), newspapers, and online media in the target language		
Acquisition of skills	Foreign language II /ILV / LV-Nr: SPR.2 / 2.Semester / ECTS: 6 The modules are designed according to the Common European Framework of Reference for Languages (CEFR). Within the framework of the modules, the students will acquire the language and communication skills required for business-oriented professional or academic activity. The following competencies are taught according to the CEFR, i.e., after completion of the module, successful graduates will have mastered the following skills in the target language: A1-A2 Basic communication skills B1-B2 Advanced use of the language and communication skills B2-C1 Independent language use to expert communication skills C1-C2 Expert language skills to fluent, competent communication skills		
Course contents	Foreign language II /ILV / LV-Nr: SPR.2 / 2.Semester / ECTS: 6 The language modules integrated into the degree program curriculum are designed according to the methodological principles of a communicative, action-oriented approach. The competence levels of the modules are based on the Common European Framework of Reference for Languages (CEFR), and a central objective is that students increase their communication skills by at least one level. In addition, there is a clear focus on acquiring academic and business-oriented skills in the target language. • A1-A2 Basic communication skills • B1-B2 Advanced use of the language and communication skills • B2-C1 Independent language use to expert communication skills • C1-C2 Expert language skills to fluent, competent communication skills		
Teaching and learning methods	Foreign language II /ILV / LV-Nr: SPR.2 / 2.Semester / ECTS: 6 Blended Learning		
Evaluation Methods Criteria	Foreign language II /ILV / LV-Nr: SPR.2 / 2.Semester / ECTS: 6 Portfolio with various components: - Various assessments (reading comprehension, listening comprehension, written expression, oral expression) - Various tasks and documentation of achievements, including contributions to group work, course units, and critical reflection on learning outcomes		

Module number:	**Regenerative energy production**	**Scope:**	
TEC.3		**10**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	2. Semester		
Level	2. Semester: Consolidation		
Previous knowledge	2. Semester: Fundamentals of Energy Technology (TEC.1), Fundamentals of Electrical Engineering (TEC.2)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Regenerative energy production /ILV / LV-Nr: TEC.3 / 2.Semester / ECTS: 10 • Kaltschmitt, M., W. Streicher und A. Wiese, 2013. Erneuerbare Energien: Systemtechnik, Wirtschaftlichkeit, Umweltaspekte. 5. Auflage. Berlin, Heidelberg: Springer-Verlag • Weischet, W. und W. Endlicher, 2018. Einführung in die Allgemeine Klimatologie. 9. Auflage. Stuttgart: Gebrüder Borntraeger Verlagsbuchhandlung • Albers, K. J., 2018. Recknagel Sprenger Albers – Taschenbuch für Heizung + Klimatechnik. 79. Auflage. Ausgabe 2019/2020. München: Deutscher Industrieverlag • Bilitewski, B., G. Härdtle, 2014. Abfallwirtschaft: Handbuch für Praxis und Lehre. 4. Auflage. Heidelberg: Springer-Verlag • Cord-Landwehr, K., 2013. Einführung in die Abfallwirtschaft. 4. Auflage. Wiesbaden: Vieweg+Teubner Verlag		
Acquisition of skills	Regenerative energy production /ILV / LV-Nr: TEC.3 / 2.Semester / ECTS: 10 The students are able to: • Describe the resource situation of renewable energies and secondary energy sources with regard to their location and with regard to the resource situation of renewable energies and secondary energy sources in terms of their location and their temporal occurrence and present options of waste and waste water utilization • Describe technologies and procedures for the utilization of renewable heat and electricity as well as naming individual processes and presenting characteristic values • Describe technologies and procedures for the utilization of energy storage as well as naming individual processes and presenting characteristic values • Describe aspects of sustainability and environmental compatibility of the individual generation and storage options • Discuss requirements for the system integration of renewable energies into the general energy supply • Name legal aspects for the utilization of renewable resources as well as the utiliza-tion of waste and waste water		
Course contents	Regenerative energy production /ILV / LV-Nr: TEC.3 / 2.Semester / ECTS: 10 • Globale und nationale Energienachfrage / Energiemix • Energiewandlungskette und Energiebilanz • Historische Entwicklung der primären und sekundären Energieträger sowie deren Förderung, Speicherung und Nutzung • Definition und Interpretation der Grundbegriffe zur Beschreibung regenerativer Energiequellen • Methoden zur Bestimmung der Ressourcenlage und Problematik volatiler erneuerbarer Energieressourcen • rechtliche Aspekte zur Nutzung von erneuerbaren Ressourcen inkl. Gesetze und Regelwerke der Abfall- und Abwasserwirtschaft • Verfahren der Abfallbehandlung und –verwertung sowie Aufbau einer Kläranlage mit mechanischen, biologischen und chemisch-physikalischen Reinigungsschritten • Aufbau, Funktionsweise und Kennwerte von Energieerzeugungsanlagen: o thermische Solaranlagen o Wärmepumpen o energetische Biomassenutzung o energetische Verwertung von Abfällen und Nutzung von Biogas, Deponiegas und Wasserstoff o Photovoltaik o Wasserkraftwerke o Windkraftanlagen o Tiefengeothermie und geothermische Stromerzeugung o solarthermische Stromerzeugung o ausgewählte innovative und in der Forschung befindliche regenerative Energieerzeugungsmöglichkeiten • Aufbau, Funktionsweise und Speicherdauer von Energiespeichern und Energieumwandlung o chemisch (anorganisch und organisch) o thermisch o mechanisch (kinetisch und potentiell) o elektrisch • Aspekte der Nachhaltigkeit in Bezug auf Effizienz, Umweltbelastung und CO2-Reduktion von Energieerzeugungsanlagen Das Modul beinhaltet Übungen. Diese Lehrform findet in Kleingruppen statt. Zudem finden im Rahmen dieses Moduls Exkursionen zu ausgewählten regenerativen Energieerzeugungen statt.		

Teaching and learning methods	Regenerative energy production /ILV / LV-Nr: TEC.3 / 2.Semester / ECTS: 10 Blended Learning
Evaluation Methods Criteria	Regenerative energy production /ILV / LV-Nr: TEC.3 / 2.Semester / ECTS: 10 Written exam

Module number:	**Selected topics in business administration**	**Scope:**	
ECO.3		**8**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	3. Semester		
Level	3. Semester: Introduction and consolidation		
Previous knowledge	3. Semester: Fundamentals of Business Administration & Economics (ECO.1)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Selected Topics Business Administration /ILV / LV-Nr: ECO.3 / 3.Semester / ECTS: 8 A generally valid description of the course content for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. Depending on the course content of the semester abroad at the partner universities, correspondingly adapted specialist literature is required. As an example, this module is based on the following specialist literature: • Kollmann, T., 2016. E-Entrepreneurship: Grundlagen der Unternehmensgründung in der digitalen Wirtschaft. Wiesbaden: Springer Gabler. • Osterwalder, A. and Y. Pigneur, 2011. Business Model Generation: Ein Handbuch für Visionäre, Spielveränderer und Herausforderer. Frankfurt a.M.: Campus Verlag GmbH. • Plümer, T. and M. Niemann, 2016. Existenzgründung Schritt für Schritt. 2nd edition. Wiesbaden: Springer Gabler.		
Acquisition of skills	Selected Topics Business Administration /ILV / LV-Nr: ECO.3 / 3.Semester / ECTS: 8 A generally valid description of the acquired competences for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. The learning out-comes are based on the fundamentals and in-depth knowledge of the individual disciplines in the energy industry. The national credits are converted individually into ECTS points corresponding to performance where appropriate. As an example, the students have acquired the following competences: The students are able to: • Explain the fundamentals of setting up a company • Apply the business plan creation process • Evaluate business plans • Explain economic trends and correlations or changes and assess the resulting new business models • Market a business model		
Course contents	Selected Topics Business Administration /ILV / LV-Nr: ECO.3 / 3.Semester / ECTS: 8 A generally valid description of the course content for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. The learning contents are based on the fundamentals and in-depth knowledge of the individual disciplines in the field of business administration. As an example, this module has the following course contents: • Fundamentals of a company with a focus on digital business models • Components of a business plan and creation of a personal business plan • Business model analysis • Fundamentals of marketing business models		
Teaching and learning methods	Selected Topics Business Administration /ILV / LV-Nr: ECO.3 / 3.Semester / ECTS: 8 The respective partner university determines the teaching methods.		
Evaluation Methods Criteria	Selected Topics Business Administration /ILV / LV-Nr: ECO.3 / 3.Semester / ECTS: 8 Students are subject to the respective examination modalities of the partner university.		

Module number:	**Selected topics Social skills & presentation**	**Scope:**	
SOC.1		**7**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	3. Semester		
Level	3. Semester: Introduction		
Previous knowledge	3. Semester: basic knowledge of the use of presentation software		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Selected Topics Social skills and Presentation /ILV / LV-Nr: SOC.1 / 3.Semester / ECTS: 7 A generally valid description of the course content for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. Depending on the course content of the semester abroad at the partner universities, correspondingly adapted specialist literature is required. As an example, this module is based on the following specialist literature: • Rosenberg, M., 2012. Gewaltfreie Kommunikation. Paderborn: Junfermann • Becker, H. und A. Hugo-Becker, 1992. Psychologisches Konfliktmanagement. München: Beck. • Oboth, M., 2008. Mediation in Teams und Gruppen. Paderborn: Junfermann		
Acquisition of skills	Selected Topics Social skills and Presentation /ILV / LV-Nr: SOC.1 / 3.Semester / ECTS: 7 A generally valid description of the acquired competences for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. The learning outcomes are based on the fundamentals and in-depth knowledge of the individual disciplines in the area of social skills. The national credits are converted individually into ECTS points corresponding to performance where appropriate. As an example, the students have acquired the following competences: The students are able to: • Present basic concepts of communicative processes and consciously use content and relationship aspects of human communication. • Understand motivation and assessment of people in a professional context • Reflect a meaningful design of work and leisure time (work-life balance) • Facilitate communicative processes within the team and identify and analyze problems in team communication and develop solution strategies. • Prepare and conduct presentations and use the techniques and media required for them in a targeted manner • Create simple 3D visualizations • Create short videos to visualize ideas and concepts with simple tools		
Course contents	Selected Topics Social skills and Presentation /ILV / LV-Nr: SOC.1 / 3.Semester / ECTS: 7 A generally valid description of the course content for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. The learning contents are based on the fundamentals and in-depth knowledge of the individual disciplines in the area of social skills. As an example, this module has the following course contents: • Basic components of communicative processes, message and meaning as well as content and relationship aspects of human communication • Language, gestures, facial expressions, posture • Possibilities of communication for assessment and motivation • Communication in a team • Communication problems and conflict solutions • Goals and target group as well as structure, content and form of a presentation • Selection and application of different presentation techniques and media • Challenges of dislocated presentations • Goals and target group as well as content and form of 3D visualizations • Selection and application of tools for the creation of 3D visualizations • Objectives and target group as well as structure, content and form of short videos • Selection and application of simple techniques and tools for video creation		
Teaching and learning methods	Selected Topics Social skills and Presentation /ILV / LV-Nr: SOC.1 / 3.Semester / ECTS: 7 The respective partner university determines the teaching methods.		
Evaluation Methods Criteria	Selected Topics Social skills and Presentation /ILV / LV-Nr: SOC.1 / 3.Semester / ECTS: 7 Students are subject to the respective examination modalities of the partner university.		

Module number:	**Selected topics economics**	**Scope:**	
VWL		**10**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	3. Semester		
Level	3. Semester: Introduction and consolidation		
Previous knowledge	3. Semester: Fundamentals of Business Administration & Economics (ECO.1)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Selected Topics Economics /ILV / LV-Nr: VWL / 3.Semester / ECTS: 10 A generally valid description of the course content for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. Depending on the course content of the semester abroad at the partner universities, correspondingly adapted specialist literature is required. As an example, this module is based on the following specialist literature: • Krugman, P., R., Wells, 2017. Volkswirtschaftslehre. 2. Auflage. München: Schäffer Poeschel • Pirounakis, N., 2013. Real Estate Economics: A Point-to-Point Handbook. UK: Routledge. • Maier, G., F., Tödtling, 2012. Regional- und Stadtökonomik 1: Standorttheorie und Raumstruktur. 5. Auflage. Wien: Springer • Maier, G., F., Tödtling, 2012. Regionalentwicklung und Regionalpolitik. 4. Auflage. Wien: Springer • Rottke, N., M., Voigtländer, 2017. Immobilienwirtschaftslehre – Ökonomie. Wiesbaden: Gabler Verla		
Acquisition of skills	Selected Topics Economics /ILV / LV-Nr: VWL / 3.Semester / ECTS: 10 A generally valid description of the acquired competences for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. The learning outcomes are based on the fundamentals and in-depth knowledge of the individual disciplines in the field of economics. The national credits are converted individually into ECTS points corresponding to performance where appropriate. As an example, the students have acquired the following competences: The students are able to: • Name the essential components of a market model and discuss market equilibrium as the interaction of supply and demand. • Name the determinants of consumer demand and explain the response to external factors such as income changes. • Explain both potentials and limitations of market models based on real markets such as housing or labor markets and extend abstract models with increased realism. • Understand production decisions in companies and to interpret the influences of market forms on price setting. • Examine and critically evaluate current developments on the basis of models. • Name the main components and institutions of an economy and explain how they function. • Name macroeconomic indicators such as gross domestic product or consumer price index and explain their content. • Independently research indicators for economic growth and inflation and present current developments.		
Course contents	Selected Topics Economics /ILV / LV-Nr: VWL / 3.Semester / ECTS: 10 A generally valid description of the course content for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. The learning contents are based on the fundamentals and in-depth knowledge of the individual disciplines in the field of economics. As an example, this module has the following course contents: Core Topics: • Economic thinking and marginal analysis • Efficient allocation of scarce resources • Market model and market equilibrium • Macroeconomic variables (GDP, inflation and unemployment) and the interrelationships Selected economics topics: • Elasticity and welfare • Cost functions and optimal firm production • Price setting and market forms • Short-term economic fluctuations: Business cycle • Money, the ECB and inflation • Long-term economic growth • International relations and trade		
Teaching and learning methods	Selected Topics Economics /ILV / LV-Nr: VWL / 3.Semester / ECTS: 10 The respective partner university determines the teaching methods.		
Evaluation Methods Criteria	Selected Topics Economics /ILV / LV-Nr: VWL / 3.Semester / ECTS: 10 Students are subject to the respective examination modalities of the partner university.		

Module number:	**Selected topics scientific & empirical methods**	**Scope:**	
WIS.2		**5**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	3. Semester		
Level	3. Semester: Introduction and consolidation		
Previous knowledge	3. Semester: Scientific and Empirical Methods (WIS.1)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Selected Topics on Scientific and Empirical Methods /ILV / LV-Nr: WIS.2 / 3.Semester / ECTS: 5 A generally valid description of the course content for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. Depending on the course content of the semester abroad at the partner universities, correspondingly adapted specialist literature is required. As an example, this module is based on the following specialist literature: • Bortz, J. und N. Döring, 2006. Forschungsmethoden und Evaluation. Berlin: Springer • Flick, U., E. Kardorff und I. Steinke, 2007. Qualitative Forschung. Rowohlts Enzyklopädie • Lamnek, S., 2010. Qualitative Sozialforschung. Berlin: Beltz • Przyborski, A. und M. Wohlrab-Sahr, 2010: Qualitative Sozialforschung. München: Oldenbourg		
Acquisition of skills	Selected Topics on Scientific and Empirical Methods /ILV / LV-Nr: WIS.2 / 3.Semester / ECTS: 5 A generally valid description of the acquired competences for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices they offer, in order to guarantee freedom for students. The learning out-comes are based on the fundamentals and in-depth knowledge of the individual disciplines in the field of scientific and empirical methods. The national credits are converted individually into ECTS points corresponding to performance where appropriate. As an example, the students have acquired the following competences: The students are able to: • Describe and apply relevant quantitative and qualitative scientific methods in the subject area • Display and independently apply tools and methods to support data collection and analysis. • Illustrate and critically reflect on results in a comprehensible way		
Course contents	Selected Topics on Scientific and Empirical Methods /ILV / LV-Nr: WIS.2 / 3.Semester / ECTS: 5 Due to the large number of partner universities and the choice of scientific and empirical methods they offer, a generally valid description of the course content for the semester abroad cannot and should not be defined in order to guarantee students freedom of choice. The content of the courses is oriented towards the fundamentals and in-depth knowledge of the individual disciplines in the field of scientific and empirical methods. As an example, this module has the following course contents: • Qualitative and quantitative scientific methods: o Questionnaire o Interview o Qualitative and quantitative content analysis o Field and laboratory study (focus experiment, A/B test and simulation) • Tools and examples: o Data collection o Data analysis o Visualization of results • Description and critical reflection of results		
Teaching and learning methods	Selected Topics on Scientific and Empirical Methods /ILV / LV-Nr: WIS.2 / 3.Semester / ECTS: 5 The respective partner university determines the teaching methods.		
Evaluation Methods Criteria	Selected Topics on Scientific and Empirical Methods /ILV / LV-Nr: WIS.2 / 3.Semester / ECTS: 5 Students are subject to the respective examination modalities of the partner university.		

Module number:	Sustainability Assessment	Scope:	
AUD.1		5	ECTS
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	4. Semester		
Level	4. Semester: Introduction		
Previous knowledge	4. Semester: Fundamentals of Energy & Sustainability Management (ENM), Fundamentals of Business Administration and Economics (ECO.1)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Sustainability Assessment /ILV / LV-Nr: AUD.1 / 4.Semester / ECTS: 5 • Baumann, H. und Tillman, A.-M., 2004. The Hitch Hiker's Guide to LCA. An orientation in life cycle assessment methodology and application. Studentlitteratur AB, Lund. • Klöpffer, W. und Grahl B., 2009. Ökobilanz (LCA). Ein Leitfaden für Ausbildung und Beruf. WILEY-VCH, Weinheim. • Vester, F., 2002. Die Kunst vernetzt zu denken. Ein Bericht an den Club of Rome. Dtv, München		
Acquisition of skills	Sustainability Assessment /ILV / LV-Nr: AUD.1 / 4.Semester / ECTS: 5 The students are able to: • Name calculation methods and characteristic values for life cycle analyses and to carry out exemplary calculations themselves • Present aspects of Corporate Social & Sustainable Responsibility (CSR)		
Course contents	Sustainability Assessment /ILV / LV-Nr: AUD.1 / 4.Semester / ECTS: 5 • Calculation methods and indicators for life cycle analysis • Corporate Social and Sustainable Responsibility (CSR) reporting		
Teaching and learning methods	Sustainability Assessment /ILV / LV-Nr: AUD.1 / 4.Semester / ECTS: 5 Blended Learning		
Evaluation Methods Criteria	Sustainability Assessment /ILV / LV-Nr: AUD.1 / 4.Semester / ECTS: 5 Written exam		

Module number:	**Energy Markets**	**Scope:**	
EWI		**4**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	4. Semester		
Level	4. Semester: Consolidation		
Previous knowledge	4. Semester: Fundamentals of Energy & Sustainability Management (ENM), Fundamentals of Business Administration and Economics (ECO.1)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Energy Markets /ILV / LV-Nr: EWI / 4.Semester / ECTS: 4 • Stern, J., 2011. The Transition to Hub-Based Gas Pricing in Continaental Europe. Oxford Institute of Energy Studies • Ströbele, W., Pfaffenberger, W., Heuterkes, M., 2012. Energiewirtschaft: Einführung in Theorie und Politik. Oldenbourg: Wissenschaftsverlag • Zenke, I., et al., 2017. Energiehandel in Europa: Öl, Gas, Strom, Derivate, Zertifikate. 4. Auflage. München: C.H.Beck Verlag		
Acquisition of skills	Energy Markets /ILV / LV-Nr: EWI / 4.Semester / ECTS: 4 The students are able to: • Explain the principles of commodity futures trading and freely traded energy mar-kets • Present and explain price formation in the energy market • Present fundamental factors influencing the trading prices of energy sources • Understand the status of the European and national energy markets with regard to political development goals • Describe the trading cascade in the electricity and gas market • Describe mechanisms of certificate trading • Differentiate between the Clean Dark and Clean Spark Spread		
Course contents	Energy Markets /ILV / LV-Nr: EWI / 4.Semester / ECTS: 4 • Unbundling of natural monopolies and free energy markets • European and national development of the electricity and gas industry • Energy pricing and influencing factors • Standardized exchange products and trading markets • Comparison of different approaches for energy services, balancing energy services and capacity services • Merit - Order • Trading cascade • Markets for renewable energy sources • Certificate trading • Clean Dark Spread, Clean Spark Spread		
Teaching and learning methods	Energy Markets /ILV / LV-Nr: EWI / 4.Semester / ECTS: 4 Blended Learning		
Evaluation Methods Criteria	Energy Markets /ILV / LV-Nr: EWI / 4.Semester / ECTS: 4 Written exam		

Module number:	**Innovative mobility concepts**	**Scope:**	
IMK		**6**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	4. Semester		
Level	4. Semester: Introduction		
Previous knowledge	4. Semester: Basics Energy & Sustainability Management (ENM), Renewable Energy Production (TEC.3)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Innovative Mobility Concepts /ILV / LV-Nr: IMK / 4.Semester / ECTS: 6 • Hunecke, M., 2015. Mobilitätsverhalten verstehen und verändern. München: Springer Fachmedien • Lienkamp, M., et al., 2013. Energieeffiziente Antriebstechnologien - Hybridisierung - Downsizing- Software und IT. Wiesbaden: Springer Vieweg • Maurer M., Gerdes, C., Lenz, B., Winner, H., 2015. Autonomes Fahren - Technische, rechtliche und gesellschaftliche Aspekte. Wiesbaden: Springer Vieweg • Wagner, H., Kabel, S., 2018. Mobilität 4.0 - neue Geschäftsmodelle für Produkt- und Dienstleistungsinnovationen. Heidelberg: Springer Gabler		
Acquisition of skills	Innovative Mobility Concepts /ILV / LV-Nr: IMK / 4.Semester / ECTS: 6 The students are able to: • Understand mobility behavior and describe different user groups • Describe cause-and-effect relationships between mobility and ecology and present mobility-relevant types of emissions from different mobility concepts • Present the effects of mobility concepts in relation to urban planning parameters • Alternative drive technologies including describing the effects of mobility concepts with regard to urban development parameters • Describe alternative drive technologies including a possible storage facility and filling station network and specify sustainability aspects • Discuss options for integrating automated and autonomous driving in innovative mobility concepts • Discuss strategies for avoiding mobility • Name and discuss exemplary concepts of local public transport for urban and rural areas • Describe legal and technical requirements for the use of regeneratively generated electricity in the mobility sector in companies as well as in private buildings, housing estates, social and non-profit housing • Analyze mobility concepts with regard to their sustainability		
Course contents	Innovative Mobility Concepts /ILV / LV-Nr: IMK / 4.Semester / ECTS: 6 • Mobility behavior and user groups • Mobility-relevant emission types (greenhouse gases, air pollutants and noise) • Land requirements for mobility • Alternative drive technologies • Storage and filling station network • Opportunities and risks of automated and autonomous driving • Mobility as a service • Strategies for mobility avoidance • Public transport concepts for urban and rural areas • Legal and technical requirements for the use of regeneratively generated electricity in the mobility sector in companies and in residential buildings • Economic efficiency of mobility concepts • Current trends in interdisciplinary mobility research The module is made up of 50% exercises. This form of teaching takes place in small groups.		
Teaching and learning methods	Innovative Mobility Concepts /ILV / LV-Nr: IMK / 4.Semester / ECTS: 6 Blended Learning		
Evaluation Methods Criteria	Innovative Mobility Concepts /ILV / LV-Nr: IMK / 4.Semester / ECTS: 6 Seminar thesis		

Module number:	**Project Management & Practice Project I**	**Scope:**	
PRX.1		**6**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	4. Semester		
Level	4. Semester: Introduction and consolidation		
Previous knowledge	4. Semester: all contents of the modules from semesters 1, 2 and 3.		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Project Management & Practical Project I /ILV / LV-Nr: PRX.1 / 4.Semester / ECTS: 6 • Patzak, G., Rattay und G., 2014. Projektmanagement: Leitfaden zum Management von Projekten, Projektportfolios und projektorientierten Unternehmen. Wien: Linde. • PMI Institute, 2009. A Guide to the Project Management Body of Knowledge (PMBOK) • Kraus, G. und R. Westermann, 2004. Projektmanagement mit System: Organisation, Methoden, Steuerung. Wiesbaden: Springer-Gabler		
Acquisition of skills	Project Management & Practical Project I /ILV / LV-Nr: PRX.1 / 4.Semester / ECTS: 6 The students are able to: • Independently identify problems and tasks from a given objective • Collect and analyze data independently • Independently develop solutions and present results • Independently acquire specialist knowledge for solving specific problems and implement this knowledge in line with the situation • Name project management methods and apply the structures and processes of a defined project independently using supporting project management tools. • Communicate in a situation-appropriate and personal manner		
Course contents	Project Management & Practical Project I /ILV / LV-Nr: PRX.1 / 4.Semester / ECTS: 6 The students are able to: • Independently identify problems and tasks from a given objective • Collect and analyze data independently • Independently develop solutions and present results • Independently acquire specialist knowledge for solving specific problems and implement this knowledge in line with the situation • Name project management methods and apply the structures and processes of a defined project independently using supporting project management tools. • Communicate in a situation-appropriate and personal manner		
Teaching and learning methods	Project Management & Practical Project I /ILV / LV-Nr: PRX.1 / 4.Semester / ECTS: 6 Blended learning & problem-based and project-based learning		
Evaluation Methods Criteria	Project Management & Practical Project I /ILV / LV-Nr: PRX.1 / 4.Semester / ECTS: 6 Project and portfolio		

Module number:	**Smart energy systems**	**Scope:**	
TEC.5		**9**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	4. Semester		
Level	4. Semester: Consolidation		
Previous knowledge	4. Semester: Fundamentals of Energy Technology (TEC.1), Renewable Energy Production (TEC.3)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Smart energy systems /ILV / LV-Nr: TEC.5 / 4.Semester / ECTS: 9 • Buchholz, B., Stycynski, Z., 2018. Smart Grids: Grundlagen und Technologien der elektrischen Netze der Zukunft. Berlin: VDE Verlag • Flosdorff, R. und G. Hilgarth, 2017. Elektrische Energieverteilung. 10. Auflage. Wiesbaden: Vieweg+Teubner Verlag • Sillaber, A., 2016. Leitfaden zur Verteilnetzplanung und Systemgestaltung - Entwicklung dezentraler Elektrizitätssysteme. Wiesbaden: Springer Vieweg • Behrens, W., et al., 2009. Technisches Handbuch Fernwärme. 2. Auflage. AGFW-Projektgesellschaft für Rationalisierung • Dötsch, C., Taschenberger, J., Schönberg, I., 1998. Leitfaden Nahwärme - Band 6. Oberhausen: Fraunhofer Umsicht • Muchna, C., et al., 2017. Grundlagen der Logistik: Begriffe, Strukturen und Prozesse. Wiesbaden: Springer Gabler		
Acquisition of skills	Smart energy systems /ILV / LV-Nr: TEC.5 / 4.Semester / ECTS: 9 The students are able to: • Understand the basics of network planning, maintenance and operation of electricity and heating/cooling networks • Identify technical, economic and legal aspects of feed-in, transmission and con-sumption in electricity and heating/cooling networks • Present technical, economic and legal options for the logistics of primary and sec-ondary energy sources • Discuss current development trends of electricity and heating/cooling networks and the logistics of energy sources and classify them with regard to their impact		
Course contents	Smart energy systems /ILV / LV-Nr: TEC.5 / 4.Semester / ECTS: 9 Smart Grids - electricity networks: • Technical, economic and legal aspects of transmission and distribution of electrical energy (overhead line, cable) • Tasks of network operators and the function of network regulation (incentive regula-tion) • Basic principles of network planning, network maintenance and network operation • Effects of feed-in and consumption on network operation in the transmission and distribution network • Network access and network use • Current trends in electrical supply networks heating/cooling networks: • Technical, economic and legal aspects of the transmission and distribution of heat and cold (district and local heating/cooling networks, MicroGrids) • Basic principles of network planning, maintenance and operation including merit order • Current trends in heating and cooling networks Logistics of energy sources: • Technical, economic and legal aspects of logistics of primary and secondary energy sources • Basic principles of logistics planning • Tasks of logistics companies and energy suppliers • Current trends in logistics of energy sources		
Teaching and learning methods	Smart energy systems /ILV / LV-Nr: TEC.5 / 4.Semester / ECTS: 9 Blended Learning		
Evaluation Methods Criteria	Smart energy systems /ILV / LV-Nr: TEC.5 / 4.Semester / ECTS: 9 Examination and portfolio		

Module number:	**Environmental & Sustainability Audit**	**Scope:**	
AUD.2		**9**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	5. Semester		
Level	5. Semester: Introduction and consolidation		
Previous knowledge	5. Semester: Fundamentals of Energy & Sustainability Management (ENM), Fundamentals of Business Administration and Economics (ECO.1), Sustainability Assessment (AUD.1)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Energy & Sustainability Audit /ILV / LV-Nr: AUD.2 / 5.Semester / ECTS: 9 • Lenitz, M., 2018. Managementsysteme richtig auditieren: Die Anwendung der ÖNORM EN ISO 19011:2018 in der Praxis. Wien: Austrian Standards plus • Weigl, C., 2018. Praxishandbuch DIN ISO 45001 - inkl. Arbeitshilfen online: Arbeits- und Gesundheitsschutz in Organisationen umsetzen und managen. Freiburg: Haufe Fachbuch • Brauweiler, J., et al., 2018. Umweltmanagementsysteme nach ISO 14001: Grundwissen für Praktiker (essentials). Berlin: Springer Gabler • Förtsch, G., Meinholz, H., 2018. Handbuch Betriebliches Umweltmanagement. Wiesbaden: Springer Vieweg • Engelfried, J., 2016. Nachhaltiges Umweltmanagement - Schritt für Schritt: Arbeitsbuch. Stuttgart: utb • Fifka, M., 2014. CSR und Reporting. Berlin: Springer Gabler • Wunder, T., 2019, Rethinking Strategic Management: Sustainable Strategizing for Positive Impact (CSR, Sustainability, Ethics & Governance). Heidelberg: Springer		
Acquisition of skills	Energy & Sustainability Audit /ILV / LV-Nr: AUD.2 / 5.Semester / ECTS: 9 The students are able to: • Present the basics of Energy & Sustainability Auditing and monitoring • Describe and analyze auditing processes including the use of standards and regula-tions for selected examples of auditing building efficiency, industrial processes and mobility / transport (traffic) • Describe elements of energy management and to name measures for implementation • Describe aspects of process modelling in the context of Energy & Sustainability Audits • Designate the tasks of an auditor		
Course contents	Energy & Sustainability Audit /ILV / LV-Nr: AUD.2 / 5.Semester / ECTS: 9 • Audits for static and dynamic quality management • Auditing of management systems (ISO 19011) • Energy & Sustainability Auditing process and monitoring (ISO 14001) • Occupational health and safety (ISO 45001) • Aspects of building physics and building and materials science as well as classification of the energy efficiency of building envelopes • Energy efficiency of technical building systems (heating, ventilation, air conditioning) as well as lighting and electricity consumption for appliances • Collection and analysis of energy data and measured values • Systematics of the energy performance certificate • Energy management (ISO 50001) • Introduction to process modelling • Tasks of an Energy & Sustainability Auditor • Analysis of examples of Energy & Sustainability Auditing		
Teaching and learning methods	Energy & Sustainability Audit /ILV / LV-Nr: AUD.2 / 5.Semester / ECTS: 9 Blended Learning		
Evaluation Methods Criteria	Energy & Sustainability Audit /ILV / LV-Nr: AUD.2 / 5.Semester / ECTS: 9 Written exam		

Module number:	**International Energy and Sustainability Development - Project**	**Scope:**	
DEV		**6**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	5. Semester		
Level	5. Semester: Consolidation		
Previous knowledge	5. Semester: Grundlagen Energietechnogie (TEC.1), Digitization in Energy & Sustainability Management (DIT), Regenerative Energieerzeugung (TEC.3), Regionale Energiekonzepte (TEC.4), Smarte Energiesysteme (TEC.5)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	International Energy & Sustainability Development - Project (E) /PT / LV-Nr: DEV / 5.Semester / ECTS: 6 none		
Acquisition of skills	International Energy & Sustainability Development - Project (E) /PT / LV-Nr: DEV / 5.Semester / ECTS: 6 The students are able to: • Apply the most important aspects of an energetic building evaluation in exercises • Apply the efficient use of resources in the building sector and in small and medium-sized enterprises by means of a system-oriented approach • Work in interdisciplinary, international teams • Reflect internationally on different approaches and possible solutions and to derive personal knowledge and expertise from this		
Course contents	International Energy & Sustainability Development - Project (E) /PT / LV-Nr: DEV / 5.Semester / ECTS: 6 The module consists of a compact week (100%), during which the following course contents are worked on in small groups with international students: • Introduction, consolidation, background and examples in the complex of topics of the project within the framework of a conference or introductory event. • Research and analysis of framework conditions and possibilities • Development and visualization of ideas and concepts • Presentation of the results to stakeholders and/or technical experts		
Teaching and learning methods	International Energy & Sustainability Development - Project (E) /PT / LV-Nr: DEV / 5.Semester / ECTS: 6 Project & Problem Based Learning		
Evaluation Methods Criteria	International Energy & Sustainability Development - Project (E) /PT / LV-Nr: DEV / 5.Semester / ECTS: 6 Project and presentation		

Module number:	**Innovationsmanagement**	**Scope:**	
ECO.2		**5**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	5. Semester		
Level	5. Semester: Introduction		
Previous knowledge	5. Semester: none		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Innovation Management (E) /ILV / LV-Nr: ECO.2 / 5.Semester / ECTS: 5 • Rogers, E., 2016. Diffusion of Innovations Simon & Schuster International. 5.Auflage. Free Press • Kelley, T., 2016. The Art of Innovation. Profile Books Verlag • Köhler-Schute, C., 2011. Wettbewerbsorientierter Vertrieb in der Energiewirtschaft: Kundenverlustprävention, neue Geschäftsfelder und Produkte, optimierte Geschäftsprozesse. 2. Auflage. Berlin: KS-Energy-Verlag • Ströbele, W., W. Pfaffenberger und M. Heuterkes, 2012. Energiewirtschaft: Einführung in Theorie und Politik. Oldenbourg: Wissenschaftsverlag • Lewrick, M. et al., 2018. Das Design Thinking Playbook: Mit traditionellen, aktuellen und zukünftigen Erfolgsfaktoren. München: Vahlen		
Acquisition of skills	Innovation Management (E) /ILV / LV-Nr: ECO.2 / 5.Semester / ECTS: 5 The students are able to: • Describe innovation processes including technical innovation processes. • Classify the maturity levels of products and technologies • Identify current innovations • Describe Design Thinking and Open Innovation as options in the innovation process and to apply them in examples		
Course contents	Innovation Management (E) /ILV / LV-Nr: ECO.2 / 5.Semester / ECTS: 5 • Phase model to describe the spread of technical innovations • Design Thinking • Open Innovation • Innovation management and interlocking with the technology and market management of companies • Success factors for innovation management projects • Current examples of innovations The module contains 50% exercises. This form of teaching takes place in small groups.		
Teaching and learning methods	Innovation Management (E) /ILV / LV-Nr: ECO.2 / 5.Semester / ECTS: 5 Blended Learning		
Evaluation Methods Criteria	Innovation Management (E) /ILV / LV-Nr: ECO.2 / 5.Semester / ECTS: 5 Portfolio		

Module number:	**Practice Transfer & Practice Project II**	**Scope:**	
PRX.2		**5**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	5. Semester		
Level	5. Semester: Consolidation		
Previous knowledge	5. Semester: Practical project I (PRX.1) and all course content from the 4th semester		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Practice Transfer & Practical Project II /ILV / LV-Nr: PRX.2 / 5.Semester / ECTS: 5 • Zerfaß, A., et al., 2019. Toolbox Kommunikationsmanagement: Denkwerkzeuge und Methoden für die Steuerung der Unternehmenskommunikation. Wiesbaden: Springer Gabler • Aerssen, B., 2018. Das große Handbuch Innovation: 555 Methoden und Instrumente für mehr Kreativität und Innovation im Unternehmen. München: Vahlen • Lafrenière, D., 2019. Delivering Fantastic Customer Experience: How to Turn Customer Satisfaction Into Customer Relationships. Abingdon: Productivity Press		
Acquisition of skills	Practice Transfer & Practical Project II /ILV / LV-Nr: PRX.2 / 5.Semester / ECTS: 5 The students are able to build on and expand their knowledge of the practical project I: • Independently identify problems and tasks from a given objective • Collect and analyze data independently • Independently develop solutions and present results • Identify, reflect and transfer examples and approaches from practice and research to solve specific problems • Independently develop expertise to solve specific problems		
Course contents	Practice Transfer & Practical Project II /ILV / LV-Nr: PRX.2 / 5.Semester / ECTS: 5 The students are able to build on and expand their knowledge of the practical project I: • Independently identify problems and tasks from a given objective • Collect and analyze data independently • Independently develop solutions and present results • Identify, reflect and transfer examples and approaches from practice and research to solve specific problems • Independently develop expertise to solve specific problems		
Teaching and learning methods	Practice Transfer & Practical Project II /ILV / LV-Nr: PRX.2 / 5.Semester / ECTS: 5 Presentation and problem-based and project-based learning		
Evaluation Methods Criteria	Practice Transfer & Practical Project II /ILV / LV-Nr: PRX.2 / 5.Semester / ECTS: 5 Project and portfolio		

Module number:	**Regional energy concepts**	**Scope:**	
TEC.4		**5**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	5. Semester		
Level	5. Semester: Introduction		
Previous knowledge	5. Semester: Fundamentals of Energy & Sustainability Management (ENM), Fundamentals of Ener-gy Technology (TEC.1), Renewable Energy Production (TEC.3)		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Regional Energy Concepts /ILV / LV-Nr: TEC.4 / 5.Semester / ECTS: 5 • Erhorn-Kluttig, H., et al., 2011. Energetische Quartiersplanung Methoden - Technologien - Praxisbeispiele. Fraunhofer IRB Verlag • Stockinger, V., 2015. Energie+-Siedlungen und -Quartiere. Definition, Planung, Betrieb, Nutzung, Bilanzierung und Bewertung. Stuttgart: Fraunhofer IRB Verlag • Drittenpreis, J., Schmid,. T. und Zadow, O., 2013. Energienutzungsplan unter besonderer Berücksichtigung des Denkmalschutzes am Beispiel der Stadt Iphofen. Stuttgart: Fraunhofer IRB Verlag • Hehn, N., 2015. Postfossile Stadtentwicklung. Weimar: Metropolis		
Acquisition of skills	Regional Energy Concepts /ILV / LV-Nr: TEC.4 / 5.Semester / ECTS: 5 The students are able to: • Describe legal aspects of regional energy concepts • Present participatory approaches and stakeholder involvement • Identify and apply methods for inventory and potential analysis • Analyze and create concepts and catalogs of measures for regional energy concepts • Identify and analyze organizational structures for the implementation of regional energy concepts		
Course contents	Regional Energy Concepts /ILV / LV-Nr: TEC.4 / 5.Semester / ECTS: 5 Regional Energy Master Plan: • legal basics • participation of stakeholders and process of a regional energy master plan • methods for stock and potential analysis (consumption, infrastructure, resources) • methods for concept development and preparation of a catalogue of measures • organizational structures for implementation • analysis of implementation examples		
Teaching and learning methods	Regional Energy Concepts /ILV / LV-Nr: TEC.4 / 5.Semester / ECTS: 5 Blended Learning		
Evaluation Methods Criteria	Regional Energy Concepts /ILV / LV-Nr: TEC.4 / 5.Semester / ECTS: 5 Project		

Module number:	**Professional internship**	**Scope:**	
PRX.3		**20**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	6. Semester		
Level	6. Semester: Consolidation		
Previous knowledge	6. Semester: all contents of modules with cross-links to the areas of responsibility of the profes-sional internship from semesters 1 to 5.		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Internship /BPR / LV-Nr: PRX.3 / 6.Semester / ECTS: 20 • Brenner, D., 2007. Schön, dass Sie da sind!: Karrierestart nach dem Studium. Nürnberg: BW Verlag		
Acquisition of skills	Internship /BPR / LV-Nr: PRX.3 / 6.Semester / ECTS: 20 The students are able to: • Apply their acquired knowledge in professional practice • Understand processes in the professional environment • Solve problems independently within the scope of professional projects and imple-ment solutions as well as justify them with comprehensible arguments and present results in a clear and target-oriented way • Successfully use communication at all levels (superiors, colleagues, employees, external partners) to solve problems • Independently develop expertise to solve specific problems		
Course contents	Internship /BPR / LV-Nr: PRX.3 / 6.Semester / ECTS: 20 The students are able to: • Apply their acquired knowledge in professional practice • Understand processes in the professional environment • Solve problems independently within the scope of professional projects and imple-ment solutions as well as justify them with comprehensible arguments and present results in a clear and target-oriented way • Successfully use communication at all levels (superiors, colleagues, employees, external partners) to solve problems • Independently develop expertise to solve specific problems		
Teaching and learning methods	Internship /BPR / LV-Nr: PRX.3 / 6.Semester / ECTS: 20 Internship		
Evaluation Methods Criteria	Internship /BPR / LV-Nr: PRX.3 / 6.Semester / ECTS: 20 Portfolio		

Module number:	**Bachelor thesis seminar**	**Scope:**	
WIS.3		**10**	**ECTS**
Degree program	University of Applied Sciences Bachelor's Program Energy & Sustainability Management full-time		
Position in the curriculum	6. Semester		
Level	6. Semester: Consolidation		
Previous knowledge	6. Semester: Scientific and empirical methods (WIS.1), Selected topics scientific and empirical methods (WIS.2) and contents from the modules with links to the topic of the Bachelor thesis of semesters 1 to 5.		
Blocked	no		
Participant group	A-levels and/or corresponding previous training, beginners		
Literature recommendation	Bachelor Thesis Seminar /SE / LV-Nr: WIS.3 / 6.Semester / ECTS: 10 • Heisen, M. R., Theisen, M., 2017. Wissenschaftliches Arbeiten: erfolgreich bei Bachelor- und Masterarbeit. München: Franz Vahlen		
Acquisition of skills	Bachelor Thesis Seminar /SE / LV-Nr: WIS.3 / 6.Semester / ECTS: 10 The students are able to: • Define a topic independently and formulate a question independently • Present the "state of the art" in the context of the question and, if necessary, critical-ly compare different views • Independently collect, interpret and critically reflect on data with the help of a self-chosen academic methodology, thereby developing and further developing argu-ments and problem solutions • Present results in a comprehensible manner and according to academic standards in the form of a Bachelor thesis • Organize oneself • Independently prepare and learn knowledge and skills from cross-connections of the course contents for the final Bachelor examination in a systematic manner		
Course contents	Bachelor Thesis Seminar /SE / LV-Nr: WIS.3 / 6.Semester / ECTS: 10 The module includes the preparation of a Bachelor thesis of 8 ECTS. Within the framework of the Bachelor thesis, regular meetings are held to discuss the current status and progress of the Bachelor thesis with the accompanying academic supervision. The following content is also taught: • Advancing the knowledge of scientific methods in relation to the independent Bachelor thesis • Visualization of scientific results such as posters, video, infographics In addition to the Bachelor thesis, the final board examination (final Bachelor examination)up to 2 ECTS forms part of this module. Students receive information on the final Bachelor examination and are supported in preparing for the examination.		
Teaching and learning methods	Bachelor Thesis Seminar /SE / LV-Nr: WIS.3 / 6.Semester / ECTS: 10 Blended learning and supervision of the Bachelor thesis		
Evaluation Methods Criteria	Bachelor Thesis Seminar /SE / LV-Nr: WIS.3 / 6.Semester / ECTS: 10 Bachelor thesis and presentation		

3.4 Internship

	Blended Learning
Evaluation Methods Criteria	Foreign Language I /ILV / Course no.: SPR.1 / 1st semester / ECTS: 3 Language examination

The students choose an internship independently. They can draw on the extensive range of internships offered by the Kufstein Tirol University of Applied Sciences. The Director of Studies checks the professional correspondence of the internship activities with the contents of the course and the qualification profiles of the course of studies. Subsequently, the Director of Studies checks whether the internship corresponds to the training objectives of the program and whether the student can be employed according to his/her level of qualification. If these requirements are met, the organizational processing is carried out by the International Relations Office (IRO). A detailed internship guide supports students in organizing their internship semester; students can also contact the IRO and the Director of Studies if they have any questions or need support.

Students must apply for the internship using the form (= occupational profile). The form contains the central data of the student and the internship supervision as well as the goals and the tasks/activities in the company providing the internship. The internship is confirmed or approved by the signatures of the Director of Studies and the internship supervisor.
The student must reflect, document and present the experiences and findings gathered and evaluate the internship. Conversely, the internship supervisor must evaluate the students. The student must prepare an interim report, a final report and a presentation and complete an evaluation form. At the beginning of the internship, he/she will receive an internship guide which lists the points to be worked on. A key requirement is to compare the agreed objectives with the achieved ones. The documentation prepared by the student and the supervisor is evaluated by the Director of Studies. If the achievement of the goals and the adaptation to the qualification level of the student are not guaranteed, the corresponding internship position is excluded for the future. A list and reports on the internships are available to subsequent students via the Moodle teaching platform.

3.5 Semester Abroad

The semester abroad is arranged in the 3rd semester of the program. The students expand their basic knowledge from the first two semesters in business administration and economics as well as in scientific and empirical methods. In addition, they acquire competences in communicative processes and presentation. The heterogeneity of the possible course contents - which is given by the different partner universities - leads to an individual further development of each individual student within the framework of the curriculum-related broad competence acquisition in the semester abroad. This strengthens and expands individually existing competences and leads to a desired differentiation and individualization of the students in the context of their studies.

In addition to the subject content, the students advance their knowledge of foreign languages, which they have acquired or expanded in the modules Foreign Language I and II and in the English-language modules. The application of the foreign language knowledge in the university, as well as in daily life, leads to an intensive specialization. In addition, there are competences in intercultural interaction, communication and conflict resolution. Students are able to understand and question different approaches to specific problems in Energy & Sustainability Management. They can describe the dynamics of culture, identity and intercultural encounters and comment on values, stereotypes and

prejudices. They also learn about intercultural differences in Energy & Sustainability Management. With this acquisition of competence, students gain the opportunity to obtain a professional foothold in an international context and to more easily take on tasks in multinational companies or with international business partners.

4 ADMISSION REQUIREMENTS

The admission requirements at the FH Kufstein Tirol are regulated according to the following terms:

1. The general admission requirements are regulated by § 4 FHG as amended; it applies to **persons with a general university entrance qualification**.

2. **Persons without a school-leaving certificate** must take a **university entrance examination** according to § 64 a UG 2002 as amended. These persons acquire the general university entrance qualification for Bachelor studies in a specialization group by passing the university entrance examination in accordance with an ordinance issued by the Rector's Office of a University. The successful completion of the university entrance examination thus entitles the holder to admission to all studies in the specialization group for which the university entrance qualification was acquired. The university entrance examination can be obtained for certain groups of subjects in accordance with an ordinance of the Rector's Office of a university, whereby the following group of subjects is relevant for the FH Kufstein Tirol:
Social and economic studies (e.g. Business Administration, Economic Education, Statistics, Sociology).

Applicants who have completed a 3-year **vocational, middle school**, a **training in the dual system** or a **subject-relevant German advanced technical college certificate** obtain the entitlement to study at the FH Kufstein Tirol through supplementary examinations in the subjects German, English and Mathematics. In the case of the German advanced technical college certificate, the supplementary examination must only be taken in those of the three subjects in which the grade is "inadequate" or worse. All supplementary examinations must be passed before the start of the third semester.

3. For **individuals with relevant dual training** the **apprenticeship certificate** in one of the following **special fields** according to the respectively valid announcement of the Federal Ministry of Economics, Family and Youth is valid as an admission requirement:

- Construction
- Banks
- Office, Administration, Organization
- Chemistry
- Physics
- Electrical Engineering, Electronics
- Trade
- Information and Communication Technologies
- Metal Technology and Mechanical Engineering
- Transport and Storage

4. **Persons with a degree** from one of the relevant **vocational middle schools** listed below may also be admitted:

- Commercial schools (at least two years)

- Commercial, technical and arts and crafts colleges
- Vocational schools for economic professions
- Technical schools for agricultural and forestry professions
- Commercial schools

Newly emerging apprenticeships in similar fields must be recognized accordingly.

The **group of persons under numbers 3. and 4.** must complete **supplementary examinations** by the beginning of the third semester as an entry requirement and, if necessary, take appropriate preparatory courses. This is possible at the FH Kufstein Tirol.

The following supplementary examinations are required for this group of people:

- German
- English
- Mathematics

Below is an overview of which subject area of the German FOS/BOS is the relevant admission requirement. Here, supplementary examinations must be taken within the first semesters in the subjects Mathematics, German and English (if a grade of "poor" or worse was achieved in these subjects).

Relevant admission requirements for the German FOS/BOS

	ENM vzB
FOS	
- Technology	X
- Economics and Administration	X
- Social Welfare	X
- Agriculture, Biotechnology and Environmental Technology	X
- Design	X
- Health	X
- International Business Studies	X
BOS	
- Technology	X
- Economics and Administration	X
- Social Welfare	X
- Agriculture, Biotechnology and Environmental Technology	X
- Health	X
- International Business Studies	X
In the case of relevant internships (trade, administration), other disciplines can also be accepted (after consultation with the Director of Studies).	