Study regulations of the
University of Applied Sciences Bachelor's Degree Program

Coding & Digital Design

To obtain the academic degree

Bachelor of Science in Engineering
abbreviated B.Sc.

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: 30 Full-time

Version 1
Contents based on the amendment of December 12, 2023
Approved by resolution of AQ Austria dated January 24, 2024 an Decided by the FH Faculty Council on April 29th, 2024

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1 JOB PROFILES

1.1 Occupational fields

Graduates of the Bachelor of Science in Engineering degree program in Coding & Digital Design (CODE) can work in all industries involved in designing, developing, and operating web-based and mobile software systems. However, thanks to their broad education, graduates are particularly in demand in the following core fields of activity:

- IT services in the area of web-based systems
- IT services in the field of mobile systems
- IT services in the area of full-stack development
- Management consulting in the context of web-based and mobile systems
- Services in the areas of web business, e-marketing, e-commerce, e-tourism, etc.

Due to the increasing importance of digital products and services and the associated growing demand for specialists, graduates can enter a wide variety of institutions and types of companies. These include large companies in the national and international environment and small and medium-sized enterprises in addition to organizations in the government and NGO environment. The main characteristics of these appointments are:

1. A **good understanding of the technical background, methods, and tools** for developing web-based and mobile systems.
2. A **high degree of flexibility in the application of these methods and tools** across the entire spectrum between technology and application.

Some typical job profiles are listed below as examples. These job profiles deliberately cover a very broad spectrum in order to illustrate that graduates of the Bachelor's degree program can gain a foothold in very different areas depending on their specialization and previous experience. The Bachelor's degree program provides a sound education geared towards the competence requirements listed below.

Job description: Software architect

Software architects design applications in close cooperation with the customers of these applications (e.g., the users) and accompany the development process of the application. Their field of activity ranges from analysis and design to project and requirements management. Specific tasks include

- Documenting functional and non-functional requirements
- Modelling of correlations
- Communication with the stakeholders of an application
- Taking the lead in the project management in the development project
- Designing a data architecture

Job description: Software developer

Software developers develop new applications in close cooperation with clients and software architects of a system. The spectrum of activities ranges from problem analysis to the design and implementation of the system. Software developers, therefore, require in-depth knowledge in the areas of software engineering, application development, databases (development and administration), operating systems, distributed and networked systems, and application security for their work. Specific tasks include

- Front-end and back-end design and development of software applications
- Designing and implementing database architectures
- Developing security concepts for applications
- Current maintenance of software applications

Job description: Specialist in the field of web/mobile IT

Specialist experts within an IT department support the company management primarily in the conception of new, web-based business areas. In the IT department, these specialists are qualified to manage, at the very least, sub-projects in the area of web applications. Specific tasks include

- Development of web-based business models
- Support of operational processes through web technologies/IT
- Support in the selection of IT technologies to be used
- Advice on the design and implementation of web-based and mobile IT architectures
- Server management and system administration for web-based infrastructures
- IT security management/testing of IT systems

Job description: Expert in web design and front-end development

Experts in this field deal with the planning, designing, and implementation of an application's web-based or mobile interface. In doing so, they consider design aspects as well as the requirements for a good human-machine interface. Their work aims to realize a technology-adequate implementation based on functional and non-functional requirements and to coordinate this with the application's other components. Specific tasks include

- Development of web designs from functional and non-functional requirements
- Technology selection of suitable implementation technologies for web-based and mobile user interfaces
- Conception and realization of the interaction with other application components
- Testing the implemented design for usability and user acceptance (usability tests)
- Integration with other aspects, e.g., web marketing (search engine optimization)

1.2 Qualification profile

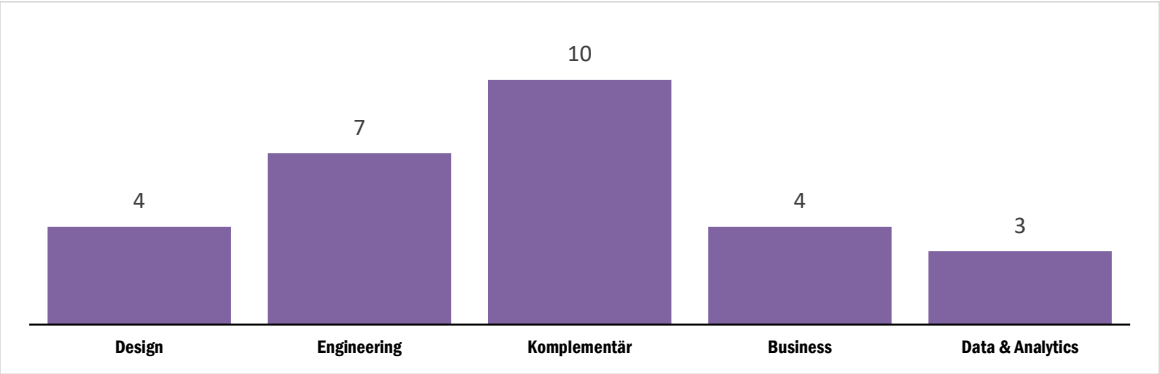
The qualification objectives and learning outcomes of the Bachelor of Science in Engineering degree program in Coding & Digital Design (CODE) correspond to academic and appointment requirements and the International Standard Classification of Education (ISCED) level 0688[1]. The content taught qualifies graduates for the professional appointments mentioned in the previous chapter and the associated competency requirements. The following table lists the modules that correspond to the fields of competencies in which the students are trained.

Module name	LV designation
Design	Design 1: Digital Design Skills
	Design 2: Digital Design Tools
	Design 3: Asset Creation
	Design 4: Usability & User Experience
Engineering	Coding 1: Software Development Basics
	Coding 2: Software Development Web
	Coding 3: Software Development Server
	Coding 4: Mobile Software Development
	Infrastructure & Application 1: IT Basics & Networks
	Infrastructure & Application 2: Practical Project 1
	Infrastructure & Application 3: Practical Project 2
Complementary	Bachelor Thesis Seminar

[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).

Module name	LV designation
	Seminar Accompanying the Semester Abroad
	Foreign Language 1
	Foreign Language 2
	Integrated Work Placement (12.5 weeks)
	Personal Development in the Appointment Environment
	Compulsory Electives Abroad: Business
	Compulsory Electives Abroad: Coding, Infrastructure & Application
	Compulsory Electives Abroad: Design
	Scientific Work
Business	Business 1: Project Management
	Business 2: IT Law
	Business 3: Digital Business & Digital Marketing
	Business 4: Business, Economics & Financing
Data & Analytics	Data & Analytics 1: Data Engineering
	Data & Analytics 2: Mathematics for Computer Science
	Data & Analytics 3: Mathematics & Statistics

Based on the aforementioned, the following diagram shows the distribution of the individual competency bundles - represented by the modules - measured by the total number of semester hours per week allocated. The diagram shows that almost half of the semester hours per week are dedicated to the development of specialist skills. The remaining semester hours per week are applied roughly equally for the development of complementary, methodological, and social skills.



2 CURRICULUM

2.1 Curriculum data

	FT	Comments
First year of study (YYYY/YY)$_{+1}$	2024/25	
Standard duration of study (Number of semesters)	6	
Obligatory weekly semester hours (WSH) (Total number for all semesters)	76	In the FT study program, a semester abroad with WSH at the respective partner universities is planned. These WSH units are not included in this figure.
Course weeks per semester (number of weeks)	15	
Obligatory LVS (Total for all sem.)	1140	In the FT program, a semester abroad with LVS from the respective partner universities is planned. These LVS are not included in this figure.
Obligatory ECTS (Total for all sem.)	180	
Winter semester start (Date, comm.: poss. CW)	CW 40	
Winter semester end (Date, comm.: poss. CW)	CW 5	
Summer semester start (Date, comm.: poss. CW)	CW 11	
Summer semester end (Date, comm.: poss. CW)	CW 28	
Winter semester weeks	15	
Summer semester weeks	15	
Obligatory semester abroad (semester specification)	5 th semester	
Course language (specify)	German	The proportion of English-language courses amounts to 22.07 % of the WSH
Internship (semester information, duration in weeks per semester)	6th semester, 12.5 weeks	A total of 500 hours must be completed over 12.5 weeks at 40 hours per week.

2.2 Curriculum matrix

The following presentation of courses does not yet include the time spent on individual supervision of students as part of their Bachelor's thesis. The number of average semester weekly hours (ASWS) shown here, therefore, corresponds to the semester hours per week without Bachelor's thesis supervision.

1. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
BUS1	Business 1: Project Management	ILV	X	X	20 %	3	1	3	45	BUS	6
DAT1	Data & Analytics 1: Data Engineering	ILV	X		20 %	3	1	3	45	DAT	6
DAT2	Data & Analytics 2: Mathematics for Computer Science	ILV	X		20 %	3	1	3	45	DAT	6
DES1	Design 1: Digital Design Skills	ILV		X	20 %	3	1	3	45	DES	6
ENG1	Coding 1: Software development basics	ILV	X		20 %	3	2	6	90	ENG	6
Total line:						15		18	270		30
Course hours = Total WSH x course weeks						225					

2. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
BUS2	Business 2: IT Law	ILV			20 %	2	1	2	30	BUS	4
DAT3	Data & Analytics 3: Mathematics & Statistics	ILV	X		20 %	3	1	3	45	DAT	6
DES2	Design 2: Digital Design Tools	ILV		X	20 %	3	1	3	45	DES	6
ENG2	Coding 2: Software Development Web	ILV	X		20 %	3	2	6	90	ENG	6
ENG3	Infrastructure & Application 1: IT Basics & Networks	ILV	X		20 %	3	1	3	45	ENG	6
KOMP1	Scientific work	SE			20 %	1	1	1	15	KOMP	2
Total line:						15		18	270		30
Course hours = Total WSH x course weeks						225					

3. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
BUS3	Business 3: Digital Business & Digital Marketing	ILV		X	20 %	3	1	3	45	BUS	6
DES3	Design 3: Asset Creation	ILV			20 %	3	1	3	45	DES	6
ENG4	Coding 3: Software Development Server	ILV	X		20 %	3	2	6	90	ENG	6
ENG6	Infrastructure & Application 2: Practical Project 1	PT	X		20 %	3	2	6	90	ENG	6
KOMP2	Foreign language 1	ILV		X	20 %	4.5	1	4.5	67.5	KOMP	6
Total line:						16.5		22.5	337.5		30
Course hours = Total WSH x course weeks						247.5					

4. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
BUS4	Business 4: Business, Economics & Financing	ILV			20 %	3	1	3	45	BUS	6
DES4	Design 4: Usability & User Experience	ILV		X	20 %	3	1	3	45	DES	6
ENG5	Coding 4: Software Development Mobile	ILV	X		20 %	3	2	6	90	ENG	6
ENG8	Infrastructure & Application 3: Practical Project 2	PT	X		20 %	3	2	6	90	ENG	6
KOMP3	Foreign language 2 (E)	ILV		X	20 %	4.5	1	4.5	67.5	KOMP	6
Total line:						16.5		22.5	337.5		30
Course hours = Total WSH x course weeks						247.5					

5. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
AWP1	Compulsory electives abroad: Coding, Infra-structure & Application	ILV	X	X	0 %	0	0	0	0	KOMP	12
AWP2	Compulsory electives abroad: Design	ILV		X	0 %	0	0	0	0	KOMP	12
AWP3	Compulsory electives abroad: Business	ILV		X	0 %	0	0	0	0	KOMP	5
KOMP4	Seminar accompanying the semester abroad	ILV		X	100 %	0.5	1	0.5	7.5	KOMP	1
Total line:						0.5		0.5	7.5		30
Course hours = Total WSH x course weeks						7.5					

6. Semester

Course no.	Course title	LV-Typ	T	E	eLV	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
KOMP5	Personality development in the appointment environment	SE			100 %	0.5	1	0.5	7.5	KOMP	1
KOMP6	Integrated work placement	BPR	X		0 %	0	0	0	0	KOMP	19
KOMP7	Bachelor thesis seminar	SE	X		100 %	0.5	1	0.5	7.5	KOMP	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	64.5	82.5	1237.5	180
Total number of courses in 1st year of study	30	36	540	60
Total number of courses in 2nd year of study	33	45	675	60
Total number of courses in 3rd year of study	1.5	1.5	22.5	60
Total number of technical events over all semesters	33.5			107
Percentage of technical courses over all semesters based on WSH / ECTS	51.94 %			59.44 %
Total number of courses in English over all semesters	24.5			72
Proportion of courses in English over all semesters based on WSH / ECTS	37.98 %			40 %
Proportion of eLearning units over all semesters based on WSH / ECTS	21.86 %			20 %

2.3 Module descriptions

Module number:	**Data & Analytics**	**Scope:**	
DAT		**18**	**ECTS**
Degree program	University of Applied Sciences, Bachelor of Science in Engineering in Coding & Digital Design, Full-time		
Position in the curriculum	1st semester		
	2nd semester		
Level	1st semester: Bachelor / 2nd semester: Bachelor		
Previous knowledge	1st semester: no prerequisites / 2nd semester: no prerequisites		
Blocked	No		
Target group	High school graduates and/or equivalent previous education, beginners		
Recommended reading	Data & Analytics 1: Data Engineering /ILV / Course no.: DAT1 / 1st semester / ECTS: 6 - Watson, Richard T.: Data Management. Databases and Organizations. 6th edition, eGreen Press, 2013 - Date, Chris: SQL and Relational Theory. 3rd edition, O'Reilly Media, 2015 - Kaufmann, Michael; Meier, Andreas: SQL & NoSQL Datenbanken. 9th edition. Springer Vieweg, 2022		
	Data & Analytics 2: Mathematics for Computer Science /ILV / Course no.: DAT2 / 1st semester / ECTS: 6 - Brill, Manfred: Mathematik für Informatiker: Einführung an praktischen Beispielen aus der Welt der Computer. 2nd edition, Munich, Vienna, Carl Hanser Publishing, 2005 - Nehrlich, Werner: Diskrete Mathematik: Basiswissen für Informatiker. Munich, Vienna, Carl Hanser Publishing, 2003 - Schwarze, Jochen: Mathematik für Wirtschaftswissenschaftler. Band 1: Grundlagen. 14th edition, Herne, NWB Publishing, 2015 - Teschl, Gerald; Teschl, Susanne: Mathematik für Informatiker. Band 1: Diskrete Mathematik und Lineare Algebra. 4th edition, Berlin, Heidelberg, Springer Vieweg, 2013		
	Data & Analytics 3: Mathematics & Statistics /ILV / Course no.: DAT3 / 2nd semester / ECTS: 6 - Bourier, Günther: Beschreibende Statistik: Praxisorientierte Einführung - mit Aufgaben und Lösungen. 13th edition, Wiesbaden, Springer Gabler, 2018 - Bourier, Günther: Schließende Statistik: Praxisorientierte Einführung - mit Aufgaben und Lösungen. 9th edition, Wiesbaden, Springer Gabler, 2018 - Schwarze, Jochen: Mathematik für Wirtschaftswissenschaftler. Band 2: Differential- und Integralrechnung. 13th edition, Herne, NWB Publishing, 2011 - Schwarze, Jochen: Grundlagen der Statistik. Band 1: Beschreibende Verfahren. 12th edition, Herne, NWB Publishing, 2014 - Schwarze, Jochen: Grundlagen der Statistik. Band 2: Wahrscheinlichkeitsrechnung und induktive Statistik. 10th edition, Herne, NWB Publishing, 2011 - Teschl, Gerald; Teschl, Susanne: Mathematik für Informatiker. Band 2: Analysis und Statistik. 3rd edition, Berlin, Heidelberg, Springer Vieweg, 2014		
Skills acquisition	Data & Analytics 1: Data Engineering /ILV / Course no.: DAT1 / 1st semester / ECTS: 6 The students - understand what database systems are used for and how they work - know different database systems and can compare them with each other - have a detailed understanding of relational database systems - can develop and implement data structures for a problem - can independently represent real-world situations as a data model - can transfer data models into a relational data structure - can apply database systems in practice - can interact with database systems - can carry out basic database management activities with NoSQL systems		
	Data & Analytics 2: Mathematics for Computer Science /ILV / Course no.: DAT2 / 1st semester / ECTS: 6 The students - understand logical operators and can apply them in simple tasks - understand set operators and can apply them in simple tasks - understand mathematical relations and can apply them in simple tasks - understand place value systems (especially binary and decimal) and can apply them in simple tasks - understand O-notation and can apply it in simple tasks - understand number sequences and can apply them in simple tasks		
	Data & Analytics 3: Mathematics & Statistics /ILV / Course no.: DAT3 / 2nd semester / ECTS: 6		

	- Students can carry out mathematical modeling for practical problems in computer science and economics and find solutions using methods of differential and integral calculus. - Students can correctly record, describe, analyze, and interpret statistical data and apply basic methods of inferential statistics, in particular, elementary estimation methods and simple test methods.
Content of teaching	Data & Analytics 1: Data Engineering /ILV / Course no.: DAT1 / 1st semester / ECTS: 6 - Basics of database systems and data management - Data modeling (single entity, attributes, cardinality, conditionality, relationship types) - Key candidates, super keys, and primary keys - Normalization of data structures (at least 1, 2, 3) - Interaction with relational databases with the support of SQL in the areas of DDL, DML, and DQL - Basic database management activities on advanced database concepts in the area of NoSQL
	Data & Analytics 2: Mathematics for Computer Science /ILV / Course no.: DAT2 / 1st semester / ECTS: 6 - Propositional logic and logical operators, predicate logic, arithmetic laws of propositional and predicate logic - Set theory: basic concepts, set operators, arithmetic rules for sets - Relations: Basic concepts, properties of relations, equivalence, and ordering relations - Number concepts: Sets of numbers, sum and product signs, place value systems, binary and hexadecimal systems - Sequences: Concept of sequence, some essential properties, convergence, O-notation - Modular arithmetic: concept and calculation rules, applications
	Data & Analytics 3: Mathematics & Statistics /ILV / Course no.: DAT3 / 2nd semester / ECTS: 6 - Repetition of the concept of function and some important functions - Differential calculus and its application in one and several variables - Elementary introduction to integral calculus - Descriptive statistics: basics, location and scattering ratios, regression and correlation - Probability theory: terminology, basic properties, rules, and the concept of discrete and continuous random variables - Inductive statistics: basics, simple estimation methods, simple test methods
Teaching and learning methods	Data & Analytics 1: Data Engineering /ILV / Course no.: DAT1 / 1st semester / ECTS: 6 Presentations, group work, project work, individual tasks, presentations and discussions
	Data & Analytics 2: Mathematics for Computer Science /ILV / Course no.: DAT2 / 1st semester / ECTS: 6 Lectures, tutorials (in connection with lecture/seminar), group work
	Data & Analytics 3: Mathematics & Statistics /ILV / Course no.: DAT3 / 2nd semester / ECTS: 6 Lectures, tutorials (in connection with lecture/seminar), group work
Evaluation methods criteria	Data & Analytics 1: Data Engineering /ILV / Course no.: DAT1 / 1st semester / ECTS: 6 Portfolio review
	Data & Analytics 2: Mathematics for Computer Science /ILV / Course no.: DAT2 / 1st semester / ECTS: 6 Portfolio review
	Data & Analytics 3: Mathematics & Statistics /ILV / Course no.: DAT3 / 2nd semester / ECTS: 6 Portfolio review

Module number:	**Engineering**	**Scope:**	
ENG		**42**	**ECTS**
Degree program	University of Applied Sciences, Bachelor of Science in Engineering in Coding & Digital Design, Full-time		
Position in the curriculum	1st semester		
	2nd semester		
	3rd semester		
	4th semester		
Level	1st semester: Bachelor / 2nd semester: Bachelor / 3rd semester: Bachelor / 4th semester: Bachelor		
Previous knowledge	1st semester: no prerequisites / 2nd semester: no prerequisites / 3rd semester: no prerequisites / 4th semester: no prerequisites		
Blocked	no		
Target group	High school graduates and/or equivalent previous education, beginners		
Recommended reading	Coding 1: Software development basics /ILV / Course no.: ENG1 / 1st semester / ECTS: 6		

- Ackermann, P.: JavaScript: Das umfassende Handbuch. JavaScript lernen und verstehen. Inkl. objektorientierter und funktionaler Programmierung. Reinwerk Computing, 2021
- Zakas, N.: Understanding ECMAScript6: The Definitive Guide for JavaScript Developers. No Starch Press, 2016
- Rozentals, N: Mastering TypeScript, 4th edition. Packt, 2021
- Sedgewick, R.; Wayne, K.: Algorithmen: Algorithmen und Datenstrukturen - Pearson Studium. IT, 2014
- Cormen, T.; Leiserson, C.; Rivest, R.; Stein, C.; Molitor, P.: Algorithmen - Eine Einführung. De Gruyter Publishing, 2013

Coding 2: Software Development Web /ILV / Course no.: ENG2 / 2nd semester / ECTS: 6

- Zakas, N.: Understanding ECMAScript6: The Definitive Guide for JavaScript Developers. No Starch Press, 2016
- Rozentals, N: Mastering TypeScript, 4th edition. Packt, 2021
- Liebel, C.: Progressive Web Apps - Das Praxisbuch. Rheinwerk Computing, 2018
- Fain, Y.; Moiseev, A.: Angular Development with TypeScript. Manning, 2019
- Banks, A.; Porcello, E.: Learning React - Functional Web Development with React and Flux. O'Reilly, 2017

Infrastructure & Application 1: IT Basics & Networks /ILV / Course no.: ENG3 / 2nd semester / ECTS: 6

- Comer, Douglas E.: Computer Networks and Internets - With Internet Applications, 6th Ed. Upper Saddle River, Pearson Education, 2015
- Stallings, W.: Operating Systems: Internals and Design Principles. Pearson, 2017
- Hoffmann, D.: Grundlagen der Technischen Informatik. Carl Hanser Publishing GmbH & Co. KG, 2016

Coding 3: Software Development Server /ILV / Course no.: ENG4 / 3rd semester / ECTS: 6

- Hauser, T.; Wenz, C.: PHP 7 und MySQL: Das umfassende Handbuch. Rheinwerk Computing, 2019
- Tilkov, S.; Eigenbrodt, M.; Schreier, S.; Wolf, O.: REST und HTTP: Entwicklung und Integration nach dem Architekturstil des Web. dpunkt Publishing, 2015
- Pollard, B.: HTTP/2 in Action. Manning, 2019
- Dippold, R; Meier, R.; Schnider, W.; Schwinn K.: Unternehmensweites Datenmanagement. Springer, 2005

Coding 4: Software Development Mobile /ILV / Course no.: ENG5 / 4th semester / ECTS: 6

- Vollmer, G.: Mobile App Engineering: Von den Requirements zum Go Live. Dpunkt Publishing, 2017
- Künneth, T.: Android 8 - Das Praxisbuch für Java-Entwickler. Rheinwerk Computing, 2018
- Knott, D.: Mobile App Testing: Praxisleitfaden für Softwaretester und Entwickler mobiler Anwendungen. dpunkt Publishing, 2016

	Infrastructure & Application 2: Practical Project 1 /PT / Course no.: ENG6 / 3rd semester / ECTS: 6 - Rainwater, H.P.: Katzen hüten. MITP-Publishing, 2003 - Balzert, Helmut: Lehrbuch der Softwaretechnik. Basiskonzepte und Requirements Engineering. Spektrum Academic Publishing, 2009. - Balzert, Helmut: Lehrbuch der Softwaretechnik. Softwaremanagement. Spektrum Academic Publishing, 2008 - Balzert, Helmut: Lehrbuch der Softwaretechnik: Entwurf, Implementierung, Installation und Betrieb. Spektrum Publishing, 2011 - Brandt-Pook, H.; Kollmeier, R.: "Softwareentwicklung kompakt und verständlich: Wie Softwaresysteme entstehen." Springer Publishing, 2016 - Post, U.: "Besser coden: So machen Sie Ihren Code (und die Welt) ein bisschen besser!" Rheinwerk Publishing, 2017
	Infrastructure & Application 3: Practical Project 2 /PT / Course no.: ENG8 / 4th semester / ECTS: 6 - Rainwater, H.P.: Katzen hüten. MITP-Publishing, 2003 - Balzert, Helmut: Lehrbuch der Softwaretechnik. Basiskonzepte und Requirements Engineering. Spektrum Academic Publishing, 2009. - Balzert, Helmut: Lehrbuch der Softwaretechnik. Softwaremanagement. Spektrum Academic Publishing, 2008 - Balzert, Helmut: Lehrbuch der Softwaretechnik: Entwurf, Implementierung, Installation und Betrieb. Spektrum Publishing, 2011 - Brandt-Pook, H.; Kollmeier, R.: "Softwareentwicklung kompakt und verständlich: Wie Softwaresysteme entstehen." Springer Publishing, 2016 - Post, U.: "Besser coden: So machen Sie Ihren Code (und die Welt) ein bisschen besser!" Rheinwerk Publishing, 2017
Skills acquisition	Coding 1: Software development basics /ILV / Course no.: ENG1 / 1st semester / ECTS: 6 Students acquire basic knowledge of the principles of procedural and object-oriented programming. They will be able to independently develop solutions for typical tasks and implement these in applications. Moreover, students will be able to use the basic elements of a modern programming language. Students will develop familiarity with basic algorithms and data structures and can select these for specific problems or adapt them independently for specific problems. The students can - understand approaches to procedural and object-oriented programming - analyze and understand programming examples - understand language elements of modern programming languages - select, configure, and use a suitable development environment - differentiate between algorithms and data structures in terms of their complexity - create their own efficient algorithms and data structures
	Coding 2: Software Development Web /ILV / Course no.: ENG2 / 2nd semester / ECTS: 6 Students acquire the basic knowledge to be able to develop, test, and maintain complex client-side web applications. Students can - apply basic concepts of client-side web development - recognize, understand, and apply basic design patterns in software architectures - implement complex client-side web applications using suitable technologies and frameworks - evaluate common technologies and frameworks for the implementation of web applications (web technologies)
	Infrastructure & Application 1: IT Basics & Networks /ILV / Course no.: ENG3 / 2nd semester / ECTS: 6 Students can - name and describe the structure and function of computer systems and their components - understand essential architectural concepts and mechanisms of modern operating systems and assess their advantages and disadvantages - understand the basic functioning of computer networks - name the components of a computer network - name algorithms and protocols used in computer networks
	Coding 3: Software Development Server /ILV / Course no.: ENG4 / 3rd semester / ECTS: 6 Students acquire knowledge of the development, testing, and operation of complex database-supported server-side applications. The students can - design service interfaces, check them for aspects such as security or performance, and implement them - design and evaluate software architectures of complex and distributed applications - evaluate and implement different web service technologies - assess and implement different and suitable message formats for data exchange - integrate different database systems in the back-end of an application - independently operate and administer solutions for server-side data storage

	Coding 4: Software Development Mobile /ILV / Course no.: ENG5 / 4th semester / ECTS: 6 Students acquire the basic knowledge to develop, test, and publish apps for different application platforms. The students - can use device-specific functions of app-centered application platforms programmatically (e.g., positioning using GPS and short-range radio systems such as RFID and Bluetooth) - can use alternative input methods such as multi-touch or sensor technology in apps - can plan and implement apps for cross-platform scenarios - know the special requirements of developing, testing, and publishing apps for different application platforms
	Infrastructure & Application 2: Practical Project 1 /PT / Course no.: ENG6 / 3rd semester / ECTS: 6 The students - can carry out a project using professional project management - understand systematic, orderly, and timely project management - know the special roles within a project - know the importance of project communication in all directions (discussions, documentation, descriptions, presentations) and know how to behave accordingly - have specialist knowledge to solve specific problems
	Infrastructure & Application 3: Practical Project 2 /PT / Course no.: ENG8 / 4th semester / ECTS: 6 The students - can carry out a project using professional project management - understand systematic, orderly, and timely project management - know the special roles within a project - know the importance of project communication in all directions (discussions, documentation, descriptions, presentations) and know how to behave accordingly - have specialist knowledge to solve specific problems
Content of teaching	Coding 1: Software development basics /ILV / Course no.: ENG1 / 1st semester / ECTS: 6 - Introduction to programming with a focus on the web - Detailed consideration of a specific programming language, program structure, data types, operators, flow structures, modularization, object orientation - Basics of software development and the tools used, in particular, the integrated development environments (IDE) and the typical work steps from design, implementation, and debugging to the current program - Algorithms and data structures used in software development
	Coding 2: Software Development Web /ILV / Course no.: ENG2 / 2nd semester / ECTS: 6 In this course, the development process of a client-side web application is taught, taking into account the special characteristics of this development environment. Essential programming concepts of modern web development are explained in theory and then applied (e.g., DOM API, web components, progressive web apps) with the help of suitable development environments and tools. Furthermore, the concepts and practical application of client-side web frameworks, which are widely used in corporate settings, are taught. In addition, typical tasks that are implemented with the support of such frameworks, for example, asynchronous communication with server-side back-ends, are presented and discussed. In addition to these practice-oriented areas, various frequently encountered architecture patterns (e.g., MVC, Inversion of Control) are presented, and their use in the frameworks under consideration is demonstrated. Practical tutorials and case studies are used to put the theory taught into practice. The knowledge gained will be discussed in the group in order to generate a deep understanding of the practical implementation.
	Infrastructure & Application 1: IT Basics & Networks /ILV / Course no.: ENG3 / 2nd semester / ECTS: 6 - Structure of modern computer systems (system components, peripheral devices, computer architectures, etc.) - Representation of complex types of information (place value systems, computer arithmetic) - General concepts of operating systems - Differences in architectural principles, memory, and process management techniques, file systems - Network architecture (ISO/OSI, TCP/IP) - Network components - Network protocols and algorithms
	Coding 3: Software Development Server /ILV / Course no.: ENG4 / 3rd semester / ECTS: 6 - Usage and implementation options for internet-based services and interfaces (APIs) - Implementation techniques for server-side applications using suitable design patterns (MVC, IoC, ORM) - Aspects of security, performance, and maintainability of server-side applications - Functionality and configuration of web servers - Server-side administration of database systems - Advanced tools in relational databases (indexes, triggers, etc.) - Database connection to applications (ORM, web service, ODBC, etc.) - Consolidation through practical tutorials and case studies - Group discussions of practical results

	Coding 4: Software Development Mobile /ILV / Course no.: ENG5 / 4th semester / ECTS: 6 - Getting to know the architecture models of app-centric application platforms - Device-specific requirements and characteristics of mobile and other IoT devices (input and output options, limited processing and storage capacities) - Development, testing, and distribution of apps (development environments, simulators, app markets) - Use of additional functionalities of mobile devices (GPS, camera, Bluetooth, multi-touch)
	Infrastructure & Application 2: Practical Project 1 /PT / Course no.: ENG6 / 3rd semester / ECTS: 6 In order to optimally prepare students for problems in working life, practical tasks are worked on in groups, preferably on the basis of assignments from partners from industry or public departments, or field experience is gained under the guidance of the course instructor. Students apply the knowledge they have acquired so far and compare it with observations and experiences gained during the practical project. While the students can deepen and improve their subject-specific skills, complementary skills such as social, risk management, budgeting, and economically responsible decision-making skills are also consolidated. Based on a client briefing (by the course instructor or external partners such as associations and companies), the students work independently on the projects presented, only guided by the course instructor if necessary: planning, coordination, budgeting, monitoring, evaluation, and final reporting are in the hands of the students. The role of the course director focuses on project coaching.
	Infrastructure & Application 3: Practical Project 2 /PT / Course no.: ENG8 / 4th semester / ECTS: 6 In order to optimally prepare students for problems in working life, practical tasks are worked on in groups, preferably on the basis of assignments from partners from industry or public departments, or field experience is gained under the guidance of the course instructor. Students apply the knowledge they have acquired so far and compare it with observations and experiences gained during the practical project. While the students can deepen and improve their subject-specific skills, complementary skills such as social, risk management, budgeting, and economically responsible decision-making skills are also consolidated. Based on a client briefing (by the course instructor or external partners such as associations and companies), the students work independently on the projects presented, only guided by the course instructor if necessary: planning, coordination, budgeting, monitoring, evaluation, and final reporting are in the hands of the students. The role of the course director focuses on project coaching.
Teaching and learning methods	Coding 1: Software development basics /ILV / Course no.: ENG1 / 1st semester / ECTS: 6 Presentations, group work, presentation and discussion of tasks
	Coding 2: Software Development Web /ILV / Course no.: ENG2 / 2nd semester / ECTS: 6 Presentations, group work, presentation and discussion of tasks
	Infrastructure & Application 1: IT Basics & Networks /ILV / Course no.: ENG3 / 2nd semester / ECTS: 6 Presentations, group work, presentation and discussion of (practical) tasks
	Coding 3: Software Development Server /ILV / Course no.: ENG4 / 3rd semester / ECTS: 6 Presentation and discussion, workshop with working on case studies, working on exercises, case study
	Coding 4: Software Development Mobile /ILV / Course no.: ENG5 / 4th semester / ECTS: 6 Presentations, group work, presentation and discussion of tasks
	Infrastructure & Application 2: Practical Project 1 /PT / Course no.: ENG6 / 3rd semester / ECTS: 6 Independent project work with accompanying coaching
	Infrastructure & Application 3: Practical Project 2 /PT / Course no.: ENG8 / 4th semester / ECTS: 6 Independent project work with accompanying coaching
Evaluation methods criteria	Coding 1: Software development basics /ILV / Course no.: ENG1 / 1st semester / ECTS: 6 Portfolio review
	Coding 2: Software Development Web /ILV / Course no.: ENG2 / 2nd semester / ECTS: 6 Portfolio review
	Infrastructure & Application 1: IT Basics & Networks /ILV / Course no.: ENG3 / 2nd semester / ECTS: 6 Portfolio review
	Coding 3: Software Development Server /ILV / Course no.: ENG4 / 3rd semester / ECTS: 6 Portfolio review
	Coding 4: Software Development Mobile /ILV / Course no.: ENG5 / 4th semester / ECTS: 6 Portfolio review

	Infrastructure & Application 2: Practical Project 1 /PT / Course no.: ENG6 / 3rd semester / ECTS: 6 Final report
	Infrastructure & Application 3: Practical Project 2 /PT / Course no.: ENG8 / 4th semester / ECTS: 6 Project documentation

Module number:	**Business & Economics**	**Scope:**	
BUS		**22**	**ECTS**
Degree program	University of Applied Sciences, Bachelor of Science in Engineering in Coding & Digital Design, Full-time		
Position in the curriculum	1st semester		
	2nd semester		
	3rd semester		
	4th semester		
Level	1st semester: Bachelor / 2nd semester: Bachelor / 3rd semester: Bachelor / 4th semester: Bachelor		
Previous knowledge	1st semester: no prerequisites / 2nd semester: no prerequisites / 3rd semester: no prerequisites / 4th semester: no prerequisites		
Blocked	no		
Target group	High school graduates and/or equivalent previous education, beginners		
Recommended reading	Business 1: Project management /ILV / Course no.: BUS1 / 1st semester / ECTS: 6 - Rainwater, H.P.: Katzen hüten. MITP-Publishing, 2003 - Balzert, Helmut: Lehrbuch der Softwaretechnik. Basic Concepts and Requirements Engineering. Spektrum Akademischer Publishing, 2009 - Balzert, Helmut: Lehrbuch der Softwaretechnik. Software management. Spektrum Academic Publishing, 2008 - Balzert, Helmut: Lehrbuch der Softwaretechnik: Entwurf, Implementierung, Installation und Betrieb. Spektrum Publishing, 2011 - Brandt-Pook, H.; Kollmeier, R.: "Softwareentwicklung kompakt und verständlich: Wie Softwaresysteme entstehen." Springer Publishing, 2016 - Post, U.: "Besser coden: So machen Sie Ihren Code (und die Welt) ein bisschen besser!" Rheinwerk Publishing, 2017		
	Business 2: IT Law /ILV / Course no.: BUS2 / 2nd semester / ECTS: 4 - Bydlinski, Peter: Grundzüge des Privatrechts (f. Österreich). Manz, 2007 - Posch, Willibald: Bürgerliches Recht (f. Österreich), Internationales Privatrecht,Springer, 2008 - Kodex- oder Manz Gesetzestexte - Kosmides, Timoleon: Die Bestimmung der Rechtsnatur von Access-Providing für die Bestimmung der Rechtsfolgen im Störungsfall, in: Taeger/Wiebe (eds.): Tagungsband Herbstakademie 2008: Von AdWords bis - Social Networks - Neue Entwicklungen im Informationsrecht, Edewecht 2008, pp. 119-132 - Kosmides, Timoleon: Providing-Verträgen. Systematik und Methodologie der Bestimmung von Rechtsnatur und Rechtsfolgen, Munich 2010 - Zahrnt, Christoph: IT-Projektverträge: Rechtliche Grundlagen, dpunkt, 2008		
	Business 3: Digital Business & Digital Marketing (E) /ILV / Course no.: BUS3 / 3rd semester / ECTS: 6 - Chaffey, D.: Digital Business and E-Commerce Management, 6th edition. Harlow: Pearson, 2015 - Scott, D. M.: The New Marketing and PR Rules in Web 2.0. MITP Publishing, 2009 - Weller, R.: Content Design: The Handbook for Conversion-Oriented Content Marketers, Web Designers & Entrepreneurs, Carl Hanser Verlag GmbH & Co KG, 2021 - Hassler, M.: Digital and Web Analytics: Evaluate Metrics, Understand Visitor Behavior, Optimize Your Website (mitp Business). MITP Publishing, 2019		
	Business 4: Business, Economics & Financing /ILV / Course no.: BUS4 / 4th semester / ECTS: 6 - Buchholz, L./ Gerhards, R.: Internal Accounting, Cost and Performance Accounting, Business Statistics and Planning Accounting, 2016 - Deimel, K.; Erdmann, G., Isemann, R.; Müller, S.: Kostenrechnung, Das Lehrbuch für Bachelor, Master und Praktiker, 2017 - Coenenberg, A.G.; Haller, A.; et al.: Introduction to Accounting: Fundamentals of Bookkeeping and Accounting, 7th edition, 2018 - Pindyck, R. S., & Rubinfeld, D. L.. Microeconomics. Pearson Germany GmbH, 2018 - Varian, H. R.: Fundamentals of Microeconomics. Walter de Gruyter GmbH & Co KG.Germany GmbH, 2014 - Kahneman, D.: Think Fast, Think Slow. Siedler Publishing, 2012. - Blanchard, O.; Illing, G.: Macroeconomics, 8th edition. - Vahs, D.; Schäfer-Kunz, J.: Einführung in die Betriebswirtschaftslehre, 7th edition, 2015 - Thommen, J.-P.; Achleitner, A.-K., et al.: General Business Administration: Comprehensive Introduction from a Management-Oriented Perspective, 8th edition, 2017 - Schweitzer, M./ Baumeister, A.: General Business Administration, 11th edition, 2015. - Hutzschenreuter, T.: General Business Administration, 6th edition, 2015		

Skills acquisition	Business 1: Project management /ILV / Course no.: BUS1 / 1st semester / ECTS: 6 The students - know the essential concepts of project management in the field of technical projects - are familiar with various project management methods and the roles involved - can actively apply project management using modern project management software such as Gitlab, Github, Jira, or similar
	Business 2: IT Law /ILV / Course no.: BUS2 / 2nd semester / ECTS: 4 The students can - present general civil and private law aspects of entrepreneurial activity - analyze common practical problems using concrete case studies - recognize common IT law issues and apply simple standard solutions
	Business 3: Digital Business & Digital Marketing (E) /ILV / Course no.: BUS3 / 3rd semester / ECTS: 6 The students can - understand the basics of online business, including the different e-commerce models, online marketplaces and platforms - understand different e-commerce business models and implement payment processing, security, and privacy aspects of online commerce - use web analytics tools such as Google Analytics to measure website traffic and conversion rates - apply technology to increase conversion rates, perform A/B testing, and optimize the user experience on websites - understand basic concepts of digital marketing, including SEO, SEM, content marketing, and social media marketing - identify current trends in web business and web marketing and analyze and evaluate future developments, including AI, chatbots, and voice search
	Business 4: Business, Economics & Financing /ILV / Course no.: BUS4 / 4th semester / ECTS: 6 In the area of accounting, the students - can explain the basic terms and sub-areas of accounting - are able to apply basic legal provisions of VAT law - can recognize, check, and process receipts and record and file them in a revenue and expenditure account - are able to explain the tasks of cost accounting and name sub-areas of cost accounting - are able to use cost accounting as a basis for pricing In the area of business administration, the students - know different legal forms of companies - can apply various instruments for investment decisions - can draft a business plan In the field of economics, the students - can define and explain economic principles - can classify and assess microeconomic and macroeconomic decisions - can assess different economic systems and economic orders - know the basics of network economics
Content of teaching	Business 1: Project management /ILV / Course no.: BUS1 / 1st semester / ECTS: 6 - Practical examples that are processed with the support of modern project management software (e.g., Gitlab) - Project planning: issues, issues board, milestone tracking - Project controlling: work breakdown structures and other performance, resource, and cost planning tools - Process models: using SCRUM as an example - Documentation: IT-supported documentation with modern project management tools (e.g. Gitlab)
	Business 2: IT Law /ILV / Course no.: BUS2 / 2nd semester / ECTS: 4 Teaching basic concepts of private law based on the requirements of professional IT practice, in particular by presenting practical legal cases and jointly developing the legal principles required to solve the respective problems. The following areas are covered in detail: - Differentiation between public law and private law - Company law - General contract law - Legal capacity and capacity to act of natural and legal persons and their legal consequences - Explanations of terms from the most important areas of law - Relationships between areas of law and IT practice

	Business 3: Digital Business & Digital Marketing (E) /ILV / Course no.: BUS3 / 3rd semester / ECTS: 6 - Introduction to Web Business: basics of online business, e-commerce models, online marketplaces and platforms - Website development and design: creating engaging and user-friendly websites, website hosting and maintenance - E-commerce strategies: e-commerce business models, payment processing, security and Data protection - Web analytics and tracking: Using tools such as Google Analytics to measure and analyze website traffic and conversions - Conversion optimization: technologies to increase conversion rates, A/B testing, and user experience optimization - Data-Driven Decision Making: web analytics supported business decisions in web business - Fundamentals of online marketing. - Content strategy: planning and creating content for websites and social media, storytelling and branding - Trends in web business and web marketing: current news and future trends in the digital space, including AI, chatbots, and voice search
Content of teaching	Business 4: Business, Economics & Financing /ILV / Course no.: BUS4 / 4th semester / ECTS: 6 Accounting: - Fundamentals of accounting - Revenue and expenditure accounting - Tasks of cost accounting - Cost accounting Pricing: Purchase, difference and sales costing, actual cost accounting Business administration: - Business basics (company, company name, company register, legal forms, sales contracts and their laws) - Equity financing, restructuring financing, debt financing, modern types of financing - Business plan incl. financial plan - Strategic management: Planning and analyses - Static and dynamic methods of investment calculation Economics: - Fundamentals of economics - Market theory and price theory - Fundamentals of microeconomics, macroeconomics, network economics - GDP, HDI, inflation, deflation, stagflation
Teaching and learning methods	Business 1: Project management /ILV / Course no.: BUS1 / 1st semester / ECTS: 6 Presentations, projects, group work, discussions
	Business 2: IT Law /ILV / Course no.: BUS2 / 2nd semester / ECTS: 4 Presentations, group work, presentation and discussion of tasks
	Business 3: Digital Business & Digital Marketing (E) /ILV / Course no.: BUS3 / 3rd semester / ECTS: 6 Presentations, group work, presentation and discussion, case studies
	Business 4: Business, Economics & Financing /ILV / Course no.: BUS4 / 4th semester / ECTS: 6 Presentation, group work, presentation and discussion
Evaluation methods criteria	Business 1: Project management /ILV / Course no.: BUS1 / 1st semester / ECTS: 6 Final project
	Business 2: IT Law /ILV / Course no.: BUS2 / 2nd semester / ECTS: 4 Final exam
	Business 3: Digital Business & Digital Marketing (E) /ILV / Course no.: BUS3 / 3rd semester / ECTS: 6 Portfolio review
	Business 4: Business, Economics & Financing /ILV / Course no.: BUS4 / 4th semester / ECTS: 6 Final exam

Module number:	**Design**	**Scope:**	
DES		**24**	**ECTS**
Degree program	University of Applied Sciences, Bachelor of Science in Engineering in Coding & Digital Design, Full-time		
Position in the curriculum	1st semester		
	2nd semester		
	3rd semester		
	4th semester		
Level	1st semester: Bachelor / 2nd semester: Bachelor / 3rd semester: Bachelor / 4th semester: Bachelor		

Previous knowledge	1st semester: no prerequisites / 2nd semester: no prerequisites / 3rd semester: no prerequisites / 4th semester: no prerequisites
Blocked	no
Target group	High school graduates and/or equivalent previous education, beginners
Recommended reading	Design 1: Digital Design Skills (E) /ILV / Course no.: DES1 / 1st semester / ECTS: 6 - Ertel, A.; Laborenz, K.: Responsive Webdesign: Konzepte, Techniken, Praxisbeispiele. Das Standardwerk. 3rd edition. Rheinwerk Computing, 2017 - Wolf, J.: HTML5 und CSS3 - Das umfassende Handbuch. Rheinwerk Computing, 2019 - Krug, S.: Don't make me think! Web Usability - Das intuitive Web. MITP Business, 2014 - Grant, K.: CSS in Depth. Manning, 2018
	Design 2: Digital Design Tools (E) /ILV / Course no.: DES2 / 2nd semester / ECTS: 6 - MediaFarbe - analog und digital: Farbe in der Medienproduktion, ISBN: 978-3642622618 - Screen Design und visuelle Kommunikation: Gestaltung interaktiver Oberflächen, ISBN: 978-3778527375 - Wahrnehmungspsychologie: Der Grundkurs, ISBN: 978-3642550737 - Die Macht der Farben: Bedeutung und Symbolik, ISBN: 9783854364337 - Adobe Photoshop: Das umfassende Standardwerk zur Bildbearbeitung, ISBN:383628619X - Adobe Illustrator: Das umfassende Handbuch: Ihr Standardwerk zum Lernen und Nachschlagen, ISBN:383627292X - Design Your First Website in Adobe Xd: How To Use Adobe's Design and Protyping Tool, ISBN: 979-8448382741 - Wireframing Essentials, ISBN: 1849698546
	Design 3: Asset Creation /ILV / Course no.: DES3 / 3rd semester / ECTS: 6 - Akenine-Möller, T., Haines, E., Hoffman, N.: Real-Time Rendering. United Kingdom, CRC Press, Taylor & Francis Group, 2018 - Parent, R.: Computer Animation: Algorithms and Techniques. Germany, Elsevier Science, 2012 - Birn, J.: Digital Lighting and Rendering. United Kingdom, Pearson Education, 2013
	Design 4: Usability & User Experience (E) /ILV / Course no.: DES4 / 4th semester / ECTS: 6 - Krug, S.: "Don't make me think!: Web Usability: Das intuitive Web." MITP Publishing, 2014 - Jacobsen, J.; Meyer, L.: "Praxisbuch Usability und UX: Was jeder wissen sollte, der Websites und Apps entwickelt bewährte Usability- und UX-Methoden praxisnah erklärt." Rheinwerk Publishing, 2017 - Semler, J. Tschierschke, K.: "App-Design: Das umfassende Handbuch: Alles zu Gestaltung, Usability und User Experience." Rheinwerk Publishing, 2019 - Nielson, J.; Budiu, R.: Mobile Usability: Für iPhone, iPad, Android. MITP Publishing, 2013
Skills acquisition	Design 1: Digital Design Skills (E) /ILV / Course no.: DES1 / 1st semester / ECTS: 6 Students in this course acquire sound knowledge and skills in developing and designing web applications and websites. A central component is developing the ability to design appealing and functional web applications. The students - understand the development process for web applications - can apply the basic technologies of the World Wide Web, including HTTP, HTML, and CSS. - can create web applications for different device classes (responsive or adaptive web design) themselves - can systematically develop the information architecture of a web application (sitemap, navigation structure, user guidance) - understand the relevant design principles of web design with regard to colors, shapes, typography, multimedia - understand the design principles of web design and can apply them themselves using simple examples
	Design 2: Digital Design Tools (E) /ILV / Course no.: DES2 / 2nd semester / ECTS: 6 The students can - create various forms of visualization of digital media themselves. - implement basic editing and design steps in Adobe programs (Photoshop, Illustrator, or XD) - apply wireframing technologies and technologies - design mockups with the help of Adobe programs - design icons and pictograms according to specific requirements
	Design 3: Asset Creation /ILV / Course no.: DES3 / 3rd semester / ECTS: 6 The students can - create 3D models with a common modeling program (such as Maya or Blender) - assess the quality of 3D models and optimize them with regard to geometric and topological requirements - create lighting setups, materials, and textures for 3D models and assess and optimize the associated effects with regard to their real-time capability - understand how to work collaboratively on virtual scenes and demonstrate familiarity with common exchange formats - create 3D animations that can be imported as actions into external engines

	Design 4: Usability & User Experience (E) /ILV / Course no.: DES4 / 4th semester / ECTS: 6 The students can - demonstrate knowledge in the areas of usability and user experience with a special focus on the web and mobile area - present content in an accessible way and focus on the needs of visitors and users - demonstrate knowledge of how websites can stand out from other sites through smooth user guidance, good findability, and a good mix of technologies and thus become a competitive advantage - demonstrate understanding of user expectations before, during, and after using a product
Content of teaching	Design 1: Digital Design Skills (E) /ILV / Course no.: DES1 / 1st semester / ECTS: 6 The subject of this introductory course is the technological foundations of the web and all critical implementation technologies in this context (HTML, CSS). Students are introduced to the entire development process of a web application (design, wireframing, implementation, testing, operation, and maintenance), with a particular focus on the interface between web design and web programming. Special focus is placed on omnipresent web technologies that are widely used, such as the HTTP protocol for communication between the web server and client, HTML, and CSS as primary tools for the display aspects on the client side. The basics of Internet programming, page coding with the markup and markup language HTML, basic formatting, tables, forms, and CSS basics (structure of CSS files, selectors, simple formatting options, dynamic display effects) are taught. Furthermore, students are taught how to create appealing websites and web applications. In addition to technological standards, this also includes specialist knowledge in the areas of layout and perception, typography (readability and font formats), and color theory (color schemes and color effects). This course provides a solid foundation for students to develop their web design and product development skills further and successfully apply them in the marketplace.
	Design 2: Digital Design Tools (E) /ILV / Course no.: DES2 / 2nd semester / ECTS: 6 - Editing and design basics in Adobe, such as - General program functions and work interfaces - Drawing tools - Layer technique - Selection functions - Crop tools - Colors and formatting - objects - Image editing - Composing - Texture/ Patterns/ Artboards - Alienation - Backgrounds - Text editing - Template creation - Rulers, guides, grids - Import / export / vectorization - Wireframing, handling wireframing technologies - Mockup design and implementation using Photoshop, Illustrator, or XD - Icon and pictogram design: Dos and don'ts
	Design 3: Asset Creation /ILV / Course no.: DES3 / 3rd semester / ECTS: 6 - Basic principles of modeling, material creation, lighting, animation, and rendering of virtual scenes - Mapping of transformations, local and global coordinate systems, as well as definition and control of the virtual camera - Overview of essential modeling tools and modifiers (e.g., included in Maya included in Maya, 3D Studio Max, and Blender) - Modeling of polygonal meshes and using parametric curves and surfaces (splines, NURBS) - Common light source types and lighting models, as well as the creation of realistic shadows for real-time applications - Material definition and physical effects such as reflection, refraction, translucency, and dispersion - Texturing of models, UV mapping, and procedural textures - Overview of advanced material and lighting techniques such as IES, HDRI, IBL, and skydomes - Keyframe animation, interpolation of transformations, gimbal lock, and path animation - Creation of animation sequences with animation curves and actions - Animation of characters using cinematic models (rigging, skinning)
	Design 4: Usability & User Experience (E) /ILV / Course no.: DES4 / 4th semester / ECTS: 6 Students learn to assess the benefits of websites and web applications based on usability criteria. This section also includes methods for usability evaluation and covers the basics of technical and content-related usability.
Teaching and learning methods	Design 1: Digital Design Skills (E) /ILV / Course no.: DES1 / 1st semester / ECTS: 6 Presentations, group work, presentation and discussion of tasks
	Design 2: Digital Design Tools (E) /ILV / Course no.: DES2 / 2nd semester / ECTS: 6 Presentations, group work, presentation and discussion of task
	Design 3: Asset Creation /ILV / Course no.: DES3 / 3rd semester / ECTS: 6

	Presentations, group work, presentation and discussion of tasks
	Design 4: Usability & User Experience (E) /ILV / Course no.: DES4 / 4th semester / ECTS: 6 Presentations, group work, presentation and discussion of tasks
Evaluation methods criteria	Design 1: Digital Design Skills (E) /ILV / Course no.: DES1 / 1st semester / ECTS: 6 Portfolio review
	Design 2: Digital Design Tools (E) /ILV / Course no.: DES2 / 2nd semester / ECTS: 6 Portfolio review
	Design 3: Asset Creation /ILV / Course no.: DES3 / 3rd semester / ECTS: 6 Portfolio review
	Design 4: Usability & User Experience (E) /ILV / Course no.: DES4 / 4th semester / ECTS: 6 Portfolio review

Module number:	**Complementary**	**Scope:**	
KOMP		**74**	**ECTS**
Degree program	University of Applied Sciences, Bachelor of Science in Engineering in Coding & Digital Design, Full-time		
Position in the curriculum	2nd semester		
	3rd semester		
	4th semester		
	5th semester		
	6th semester		
Level	2nd semester: Bachelor / 3rd semester: Bachelor / 4th semester: Bachelor / 5th semester: Bachelor / 6th semester: Bachelor		
Previous knowledge	2nd semester: no prerequisites / 3rd semester: no prerequisites / 4th semester: no prerequisites / 5th semester: no prerequisites / 6th semester: no prerequisites		
Blocked	no		
Target group	High school graduates and/or equivalent previous education, beginners		
Recommended reading	Compulsory electives abroad: Coding, Infrastructure & Application /ILV / Course no.: AWP1 / 5th semester / are determined by the respective partner university		
	Compulsory electives abroad: Design (E) /ILV / Course no.: AWP2 / 5th semester / ECTS: 12 are determined by the respective partner university		
	Compulsory electives abroad: Business (E) /ILV / Course no.: AWP3 / 5th semester / ECTS: 5 are determined by the respective partner university		
	Scientific work /SE / Course no.: KOMP1 / 2nd semester / ECTS: 2 - Bänsch, Axel: Wissenschaftliches Arbeiten: Seminar- und Diplomarbeiten. Munich, Oldenbourg, 2009 - Chalmers, Alan: Wege der Wissenschaft. Berlin, Heidelberg: Springer, 2007 - Eco, Umberto: Wie man eine wissenschaftliche Abschlussarbeit schreibt. UTB Facultas University Publishing, 2010 - Karmasin, Matthias; Ribing, Rainer: Die Gestaltung wissenschaftlicher Arbeiten. 6th edition, facultas.wuv, UTB, Vienna, 2011 - Leopold-Wildburger, Ulrika; Schütze, Jörg: Verfassen und Vortragen - Wissenschaftliche Arbeiten und Vorträge leicht gemacht. Springer, 2002		
	Foreign language 1 /ILV / Course no.: KOMP2 / 3rd semester / ECTS: 6 All modules and levels: Course book - by arrangement; authentic materials, e.g., from foreign language magazines (including specialist journals), newspapers, and online media		
	Foreign language 2 /ILV / Course no.: KOMP3 / 4th semester / ECTS: 6 All modules and levels: Course book - by arrangement; authentic materials, e.g., from foreign language magazines (including specialist journals), newspapers, and online media		

	Seminar Accompanying the Semester Abroad (E) /ILV / Course no.: KOMP4 / 5th semester / ECTS: 1 - Simmendinger, F.: "Semester Abroad: Conquer the World the Easy Way!" Amazon Publishing, 2012 - Berninghausen, J.: "Aussen Einsichten: Interkulturelle Fallbeispiele von deutschen und internationalen Studierenden über das Auslandsjahr." Kellner Publishing, 2012
	Personality development in the appointment environment /SE / Course no.: KOMP5 / 6th semester / ECTS: 1 - Brandes-Visbeck, C.; Thielecke, S.: "Fit für New Work: Wie man in der neuen Arbeitswelt erfolgreich besteht - Businessmodelle, Work-Life-Balance, Co-Working & Co." Redline Publishing, 2018 - Hübler, M.: "New Work: Menschlich - Demokratisch - Agil: Wie Sie Teams und Organisationen erfolgreich in eine digitale Zukunft führen." Metropolitan Publishing, 2018 - Späth, T.; Grabitzki, S.: "Leben und Arbeit in Balance: Strategien und Übungen für Trainer, Coaches und Berater." Beltz Publishing, 2012
	Integrated work placement /BPR / Course no.: KOMP6 / 6th semester / ECTS: 19 - Brenner, Doris: "Karrierestart nach dem Studium." Haufe Lexware, 2015 - Faber, Manfred, et al.: "Berufseinstieg und Probezeit aktiv gestalten: Wie Sie nach dem Studium die Grundsteine für Ihre Karriere legen." Springer Gabler Publishing, 2014 - Rippler Stefan, et al: "Trainee-Knigge: Der Ratgeber für den erfolgreichen Karriere-Start." Springer Gabler Publishing, 2013
	Bachelor thesis seminar /SE / Course no.: KOMP7 / 6th semester / ECTS: 10 - Bänsch, Axel; Alewell, Dorothea: "Wissenschaftliches Arbeiten", 11th edition. Oldenbourg Publishing, 2013 - Eco, Umberto: "Wie man eine wissenschaftliche Abschlussarbeit schreibt." UTB Facultas University Publishing, 2010 - Chalmers, Alan: Wege der Wissenschaft. Berlin, Heidelberg: Springer, 2007 - Kipman, U. ; Leopold-Wildburger U.; Reiter T.: "Wissenschaftliches Arbeiten 4.0: Vortragen und Verfassen leicht gemacht." 3rd edition. Springer Gabler Publishing, 2017
Skills acquisition	Compulsory electives abroad: Coding, Infrastructure & Application /ILV / Course no.: AWP1 / 5th semester / Students can follow courses in information technology in a foreign language at the university level and work through the teaching content in a foreign language. In doing so, they deepen the knowledge they have already acquired in IT-related subjects during their studies or supplement their knowledge with areas or technologies that are complementary to their previous studies (e.g., in the field of multimedia technologies, gaming, business-related enterprise systems, etc.).
Skills acquisition	Compulsory electives abroad: Design (E) /ILV / Course no.: AWP2 / 5th semester / ECTS: 12 The students can - describe and apply basic concepts and methods from the field of design - describe and apply in-depth concepts and contexts from the field of design - critically evaluate and scrutinize design methods and concepts - apply and analyze methods and concepts of digital design to issues in the field of information technology and the web
	Compulsory electives abroad: Business (E) /ILV / Course no.: AWP3 / 5th semester / ECTS: 5 Students can - describe and apply basic concepts and methods from business administration - describe and apply in-depth concepts and contexts from business administration - critically evaluate and question methods and concepts of business administration - apply and analyze methods and concepts of business administration to issues in the field of information technology and the web
	Scientific work /SE / Course no.: KOMP1 / 2nd semester / ECTS: 2 Students can - formulate research questions appropriately - plan methodical procedures to answer research questions - research, evaluate, and cite specialist literature - carry out and write a scientific paper of medium complexity and manageable scope

Skills acquisition	Foreign language 1 /ILV / Course no.: KOMP2 / 3rd semester / ECTS: 6 The modules are designed in accordance with the Common European Framework of Reference for Languages (CEFR). As part of the modules, students will acquire the language skills and develop the abilities required for business-oriented professional or academic appointments. The following competences are taught in accordance with the CEFR, i.e., successful graduates will be able to demonstrate the knowledge and skills associated with the following activities upon completion of the modules: A1 - Beginner - Demonstrate understanding of and use familiar, everyday expressions and very basic phrases aimed at the satisfaction of concrete needs - Introduce themselves and others and ask other people questions about themselves, e.g., where they live, people they know, things they have - and can give answers to questions of this type - Communicate in a simple way if the other person speaks slowly and clearly and is willing to help. A2 - Basic skills - Demonstrate understanding of sentences and frequently used expressions related to areas of most immediate relevance (e.g., personal and family information, shopping, work, local area) - Communicate in simple, routine situations involving a simple and direct exchange of information about familiar and routine matters - Use simple means to describe their background and education, immediate environment, and things related to immediate needs B1 - Advanced use of language - Demonstrate understanding of the main points when using clear standard language and when dealing with familiar matters from work, school, leisure, etc. - Deal with most situations encountered when traveling in the language area - Express themselves simply and coherently on familiar topics and areas of personal interest - Talk about experiences and events, describe dreams, hopes, and ambitions, and give brief reasons or explanations for plans and opinions B2 - Independent use of language - Demonstrate understanding of the main ideas of complex texts on both concrete and abstract topics - Demonstrate understanding of technical discussions in their field of specialization - Communicate fluently and spontaneously enough to hold a normal conversation with native speakers without much effort on either side - Express themselves clearly and in detail on a wide range of topics, explain a viewpoint on a topical issue, and give the advantages and disadvantages of various options C1 - Specialist language skills - Demonstrate understanding of a wide range of demanding, longer texts and grasp implicit meaning - Express themselves fluently and spontaneously without often having to search for clearly recognizable words - Use the language effectively and flexibly in social and appointment situations, training, and study - Express themselves clearly in a structured and detailed way on complex subjects using a variety of text-linking devices appropriately C2 - Near-native speaker - Demonstrate understanding of with ease practically everything they read or hear - Summarize information from different written and oral sources, giving reasons and explanations in a coherent presentation - Express themselves spontaneously very fluently and precisely and make finer nuances of meaning clear in more complex situations
	Foreign language 2 /ILV / Course no.: KOMP3 / 4th semester / ECTS: 6 The modules are designed in accordance with the Common European Framework of Reference for Languages (CEFR). As part of the modules, students will acquire the language skills and develop the abilities required for business-oriented professional or academic appointments. The following skills are taught in accordance with the CEFR, i.e., successful graduates will have mastered the activities in the target language associated with each level after completing the corresponding modules: A1-A2 Basic communication skills B1-B2 Advanced language use and communication skills B2-C1 Independent language use to proficient language skills and communication skills C1-C2 Proficient language skills to fluent, competent communication skills
	Seminar accompanying the semester abroad (E) /ILV / Course no.: KOMP4 / 5th semester / ECTS: 1 The students can - reflect in a structured way on the similarities and contradictions of theoretical teaching knowledge and practical applications - develop a synthesis on the basis of critical reflection - use their experiences to reflect on intercultural differences and similarities between the host country and their home country.
	Personality development in the appointment environment /SE / Course no.: KOMP5 / 6th semester / ECTS: 1 The students can - demonstrate knowledge of the basic principles of personality development in an appointment context - demonstrate familiarity with the concept of work-life balance - actively apply the concepts they have learned in the context of their work placement

Skills acquisition	Integrated work placement /BPR / Course no.: KOMP6 / 6th semester / ECTS: 19 The students can - apply the knowledge they have acquired during their studies to their appointments - understand processes in the professional environment - solve problems and implement solutions in the context of project ending dates (practical competence) - develop and refine arguments, solutions, and strategies independently (problem-solving skills) In addition, knowledge of communication with superiors, employees, and colleagues is deepened, further developed, and profitably implemented (social competence)
	Bachelor thesis seminar /SE / Course no.: KOMP7 / 6th semester / ECTS: 10 Students can - formulate a task into a project and solve it using scientific methods and practice-oriented tools in the project period, as well as work through this process independently in a scientific paper - independently narrow down a topic from the field of web-based technologies, web business, or related areas, prepare it scientifically, and independently develop a self-formulated research question - carry out the process of scientific work independently and in a self-organized manner - present and discuss the results of their work in the seminar - use the available resources appropriately and purposefully (in particular time management and research skills) - write an academic bachelor's thesis according to the standards of academic writing and apply formal requirements of the relevant guidelines (improvement of expressiveness)
Content of teaching	Compulsory electives abroad: Coding, Infrastructure & Application /ILV / Course no.: AWP1 / 5th semester / A generally valid module description for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices offered there within the information technology-oriented sciences (computer science, business informatics, information management, and related disciplines) in order to ensure freedom for students. The national credits are converted individually into ECTS points in accordance with the achievements demonstrated. The students are subject to the respective examination modalities at the partner university. The courses listed below are, therefore, to be regarded as examples: - Advanced Programming - Database Design & Development - Multimedia Technologies - Web Technology - Mobile Technologies - Enterprise Development & Enterprise Integration - Introductory courses in Game Design - Augmented and Virtual Reality - Human-Computer Interaction and User Experience Design (UX) - Software Engineering and Testing
	Compulsory electives abroad: Design (E) /ILV / Course no.: AWP2 / 5th semester / ECTS: 12 A generally valid module description for the semester abroad cannot and should not be defined due to the large number of partner universities and the options offered there within the design-oriented sciences in order to ensure freedom for students. The content of teaching is based on the fundamentals and specializations of the individual disciplines in the economic subject areas of the degree program. The national credits are converted individually into ECTS points in accordance with the achievements demonstrated. Students are subject to the respective examination modalities at the partner university. Some examples of possible subject areas are shown below: - Design basics - Design techniques - Design tools - Object design (e.g., 3D objects) - Animation - Game design - Usability/user experience - Web/mobile design
	Compulsory electives abroad: Business (E) /ILV / Course no.: AWP3 / 5th semester / ECTS: 5 A generally valid module description for the semester abroad cannot and should not be defined due to the large number of partner universities and the choices offered there within the economically oriented sciences in order to ensure freedom for the students. The content of teaching is based on the fundamentals and specializations of the individual disciplines in the economic subject areas of the degree program. The national credits are converted individually into ECTS points in accordance with the achievements demonstrated. Students are subject to the respective examination modalities at the partner university. Some examples of possible subject areas are shown below: - Organizational Management - Accounting - Controlling - Sales Management - Marketing and Corporate Communication - Strategic Management - Corporate Management - Procurement, Production and Logistics - Business Informatics - e-Commerce & e-Business - Information Management

	Scientific work /SE / Course no.: KOMP1 / 2nd semester / ECTS: 2 The main aim of the introductory course on scientific work is to familiarize students with the special features, rules, and basic principles of science and scientific work. The focus here is on learning and understanding deductive and inductive methods and the empirical procedures for gaining knowledge. Students are prepared to write seminar papers independently and in accordance with the usual standards of scientific work. This preparation includes a focus on dealing with literature as well as discussions regarding the quality of academic co-workers - the concepts of intellectual honesty and intersubjective comprehensibility are of particular importance here.
Content of teaching	Foreign language 1 /ILV / Course no.: KOMP2 / 3rd semester / ECTS: 6 A1 - Beginner Activities to develop an understanding of and use familiar, everyday expressions and very simple sentences aimed at satisfying specific needs. Practice introducing themselves and others and ask other people questions about themselves - e.g., where they live, what kind of people they know, or what kind of things they have - and answer questions of this kind. Practice communicating in a simple way if the other person speaks slowly and clearly and is willing to help. A2 - Basic skills Activities to develop an understanding of sentences and frequently used expressions related to areas of most immediate relevance (e.g., personal and family information, shopping, work, local area). Practice communicating in simple, routine situations involving a simple and direct exchange of information about familiar and routine matters. Practice using simple means to describe their own background and education, immediate environment, and things related to immediate needs. B1 - Advanced use of language Practice using clear standard language and communicate about familiar matters from work, school, leisure, etc. Practice using conversational skills relevant to travel in the language area. Practice expressing themselves simply and coherently on familiar topics and areas of personal interest. Practice reporting on experiences and events, describe dreams, hopes, and goals, and give brief reasons or explanations for plans and opinions. B2 - Independent use of language Practice expressing the main ideas of complex texts on concrete and abstract topics and taking part in technical discussions in their field of specialization. Practice communicating so spontaneously and fluently that a normal conversation with native speakers is possible without great effort on either side. Practice expressing themselves clearly and in detail on a wide range of topics, explaining a viewpoint on a topical issue, and giving the advantages and disadvantages of various options. C1 - Specialized language skills Activities to develop an understanding of a wide range of demanding, longer texts and grasp implicit meaning. Practice expressing themselves spontaneously and fluently without having to search for clearly recognizable words more often. Practice using the language effectively and flexibly in social and professional life or in training and studies. Practice expressing themselves clearly in a structured and detailed way regarding complex subjects using various means of linking texts appropriately. C2 - Almost native speaker level Practice communicating effortlessly in all language situations. Practice summarizing information from different written and oral sources, giving reasons and explanations in a coherent presentation. Practice expressing themselves spontaneously, very fluently, and precisely, and making clear finer shades of meaning even in more complex situations.
	Foreign language 2 /ILV / Course no.: KOMP3 / 4th semester / ECTS: 6 The study-integrated language modules offered 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 for students to improve their communication skills by at least one level. In addition, there is a clear focus on the acquisition of academic and business-oriented skills in the target language. - A1-A2 Basic communication skills - B1-B2 Advanced language use and communication skills - B2-C1 Independent language use to proficient language knowledge and communication skills - C1-C2 Proficient language knowledge to fluent, competent communication skills
Content of teaching	Seminar accompanying the semester abroad (E) /ILV / Course no.: KOMP4 / 5th semester / ECTS: 1 As part of the seminar, students present and analyze their experiences during their stay abroad. The aim is to put their individual experiences into an academic context (intercultural discourse, intercultural awareness and understanding, etc.), discuss them with their fellow students, and compare them with their experiences. In order to achieve a stronger bond between the students and the FH Kufstein during their semester abroad, to strengthen the cohesion of the cohort, and to promote an exchange of experiences between the students, this course is conducted during the semester abroad with the support of eLearning methods. The content of teaching is a structured reflection on the similarities and contradictions of theoretical teaching knowledge and practical applications in order to achieve a critical reflection ability for the theory-practice friction surface in the sense of a synthesis of both for professional practice. Individual experiences are critically reflected upon together in group discussions structured by the course instructor (e.g., via forums and chats).

Content of teaching	Personality development in the appointment environment /SE / Course no.: KOMP5 / 6th semester / ECTS: 1 As part of the integrated professional internship, students consider the challenges of everyday professional life and reflect on their current tasks in the internship company in the context of their personal development. The students will - develop familiarity with the essential characteristics of conscious personal development in the appointment environment - become aware of the importance of an appropriate relationship between work tasks and personal needs (work-life balance) - learn to reflect on their work in the context of their personal experiences - receive individual and specific feedback from the lecturer as part of supervision
	Integrated work placement /BPR / Course no.: KOMP6 / 6th semester / ECTS: 19 Supplementing the students' theoretical knowledge with practical activities and business law issues in practice. At least 500 hours of full-time employment at an external company (12.5 weeks, i.e., approximately three months with an assumed working week of 40 hours/week). The work placement ensures that students find their feet when entering the world of work and gain confidence in applying the knowledge they have acquired through the experience they have already gained. Processes, workflows, and situations in the professional environment should be familiarized with and understood. Support for students during their work placement: reflection, discussion of problems, and experience reports.
	Bachelor thesis seminar /SE / Course no.: KOMP7 / 6th semester / ECTS: 10 The students report regularly on the progress of their bachelor's thesis during the working process in consultation with the supervisor. In seminar form, they present their current work status in small groups in the form of short presentations and discuss the results of their work in the group. The students receive instructions and templates for writing the bachelor's thesis and, thus, appropriate accompanying academic supervision. In this course, students write their final bachelor's thesis. They are individually supervised by a lecturer with regard to individual questions. Within a given period of time, students are required to scientifically address an issue relevant to their studies and training as part of a bachelor's thesis. The topic should be worked on and discussed independently using scientific methods. The bachelor's thesis can be written with a practical reference from the internship and thus deal with a current and concrete problem scientifically and practically.
Teaching and learning methods	Compulsory electives abroad: Coding, Infrastructure & Application /ILV / Course no.: AWP1 / 5th semester / Determined by the respective partner university
	Compulsory electives abroad: Design (E) /ILV / Course no.: AWP2 / 5th semester / ECTS: 12 Determined by the respective partner university
	Compulsory electives abroad: Business (E) /ILV / Course no.: AWP3 / 5th semester / ECTS: 5 Determined by the respective partner university
	Scientific work /SE / Course no.: KOMP1 / 2nd semester / ECTS: 2 Lecture with discussion and examples
	Foreign language 1 /ILV / Course no.: KOMP2 / 3rd semester / ECTS: 6 ILV designed according to a communicative, action-oriented approach
	Foreign language 2 /ILV / Course no.: KOMP3 / 4th semester / ECTS: 6 Blended learning
	Seminar accompanying the semester abroad (E) /ILV / Course no.: KOMP4 / 5th semester / ECTS: 1 Presentations, group work, presentation and discussion of tasks
	Personality development in the appointment environment /SE / Course no.: KOMP5 / 6th semester / ECTS: 1 Individual coaching and work in small groups
	Integrated work placement /BPR / Course no.: KOMP6 / 6th semester / ECTS: 19 Application of the content from the courses of the first five semesters on the basis of practical problems at the internship provider
	Bachelor thesis seminar /SE / Course no.: KOMP7 / 6th semester / ECTS: 10 Presentation and discussion, work in small groups, individual supervised scientific work
Evaluation methods criteria	Compulsory electives abroad: Coding, Infrastructure & Application /ILV / Course no.: AWP1 / 5th semester / are determined by the respective partner university
	Compulsory electives abroad: Design (E) /ILV / Course no.: AWP2 / 5th semester / ECTS: 12 are determined by the respective partner university

	Compulsory electives abroad: Business (E) /ILV / Course no.: AWP3 / 5th semester / ECTS: 5 are determined by the respective partner university
	Scientific work /SE / Course no.: KOMP1 / 2nd semester / ECTS: 2 Seminar paper
	Foreign language 1 /ILV / Course no.: KOMP2 / 3rd semester / ECTS: 6 The assessment takes into account students' academic achievements and competencies in reading comprehension, listening comprehension, written expression, oral expression, and the quality of their collaboration (including online).
	Foreign language 2 /ILV / Course no.: KOMP3 / 4th semester / ECTS: 6 Portfolio with various components: - various performance assessments (reading comprehension, listening comprehension, written expression, oral expression) - various assignments and certificates of achievement, incl. contributions to group work, course units
	Seminar accompanying the semester abroad (E) /ILV / Course no.: KOMP4 / 5th semester / ECTS: 1 Final presentation
	Personality development in the appointment environment /SE / Course no.: KOMP5 / 6th semester / ECTS: 1 Final report
	Integrated work placement /BPR / Course no.: KOMP6 / 6th semester / ECTS: 19 Final report
	Bachelor thesis seminar /SE / Course no.: KOMP7 / 6th semester / ECTS: 10 Bachelor's thesis

2.4 Internship

Students choose an internship independently. Thereby, they can also take into consideration the extensive range of internships offered by the University of Applied Sciences (FH) Kufstein Tirol. The degree program director checks whether the internship activities match the course content and the qualification profiles of the degree program. Moreover, the degree program director checks whether the internship corresponds to the educational objectives of the degree program and whether the student can be employed according to their qualification level. A practical semester with a preparatory training guide helps students organize their internship; the degree program director is available to answer questions and provide support.

Students must apply for the work placement using the form (= job description). The form contains the central data of the student and the internship supervisor, as well as the objectives and tasks/activities at the internship company. Internship confirmation and approval are issued through the signatures of the degree program director and the internship supervisor.

The student must reflect on, document, and present the experience and knowledge gained and evaluate the internship position. Conversely, the internship supervisor must evaluate the student. The student must prepare an interim report, a final report, and a presentation and complete an evaluation form. The student receives an internship guide at the start date of the internship, which lists the points to be worked on. A central requirement is to compare the agreed goals with the realized goals. The degree program director evaluates the documentation prepared by the student and the supervisor.

2.5 Semester abroad

During the mandatory semester abroad, students in the Coding & Digital Design degree program have the opportunity to apply the knowledge they have acquired in the first four semesters of their studies in the areas of

- Coding, Infrastructure & Application (to the extent of 12 ECTS),
- Design (to the extent of 12 ECTS), and

- Business (to the extent of 4 ECTS)

or acquire complementary knowledge. Depending on the availability of study places, students can choose from the portfolio of around 230 partner universities and colleges of the University of Applied Sciences (FH) Kufstein Tirol and take courses at these institutions. Depending on the university, Coding & Digital Design students can choose from a range of courses in different focus areas. This allows students to specialize in subject areas that cannot currently be offered at the Bachelor's level at the FH Kufstein Tirol (e.g., game development, VR/AR development, machine learning, etc.). Study places abroad are allocated on a university-wide basis, taking into account the academic achievements of the respective students over the course of their studies if more students are interested in a study place than places available at the partner university. Over the last few years, students have been offered significantly more places abroad than were actually required, so the FH Kufstein Tirol has been able to guarantee the opportunity to study abroad. If necessary, the degree program provides advice on the appropriate subject focus for the semester abroad.

During the semester abroad, students are supported by the course "Seminar Accompanying the Semester Abroad" in order to actively reflect on their experiences in an academic context (intercultural discourse, intercultural awareness and understanding etc.).

3 ADMISSION REQUIREMENTS

The approval requirements at the University of Applied Sciences (FH) Kufstein Tirol are regulated according to the following provisions:

1. The general approval requirements are regulated by § 4 FHG as amended; this applies to **applicants with a general university entrance qualification**.

2. Applicants **without a university entrance qualification** must take a **university entrance qualification examination** in accordance with § 64 a UG 2002 as amended. In accordance with a regulation issued by the rectorate of a university, these individuals obtain the General University Entrance Qualification for bachelor's degree programs in a group of fields of study by passing the university entrance qualification examination. Successful completion of the entitlement to study examination thus entitles the holder to admission to all degree programs in the group of degree programs for which the entitlement to study was acquired. The university entrance qualification examination can be acquired in accordance with a regulation of the rectorate of a university for certain study groups, whereby the University of Applied Sciences (FH) Kufstein Tirol considers the following study group:

    - Social and economic science studies (e.g., business administration, business education, statistics, sociology).

    - Applicants who have completed a 3-year **vocational secondary school**, completed an **apprenticeship in the dual system,** or have obtained a **subject-relevant German entrance qualification for universities of applied sciences are** entitled to study at the FH Kufstein Tirol through additional examinations in German, English, and Mathematics. In the case of the German secondary school diploma "Fachhochschulreife," the additional examination must only be taken in those of the three subjects in which the certificate grade is "insufficient" or worse. All required examinations must be successfully completed before the start of the third semester.

3. For **applicants with relevant dual training,** an **apprenticeship qualification** in one of the following **subject areas** according to the respective valid announcement of the Federal Ministry of Economy, Family, and Youth meets the admission requirements:

- Construction and building services
- Office, administration, organization
- Chemistry and plastics
- Electrical engineering, electronics
- Trade
- Information and communication technology
- Metal technology and mechanical engineering
- Media design and photography
- Paper production, paper processing, printing
- Transportation and storage

4. **Applicants with a degree** from one of the following relevant **vocational secondary schools** also meet admission requirements:

   - Hotel management school, tourism management school, hospitality management school (three-year program)
   - Commercial schools (at least two-year program)
   - Industrial, technical, and arts and crafts colleges
   - Secondary school for economic professions
   - Secondary school for technical professions
   - Technical colleges for tourism professions
   - Technical colleges for business professions (three-year program)
   - Business school (at least two-year program)
   - Technical colleges for agricultural and forestry professions (at least two-year program)
   - Business schools (three-year program)

Newly emerging apprenticeships in similar subject areas must be recognized accordingly.

The **target group described by points 3 and 4** must take **additional examinations** by the start date 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 additional examinations are required for this group of people:

- German
- English
- Mathematics

Below is an overview of the subject areas from German technical colleges and vocational high schools that meet admission requirements. Here, additional examinations in the subjects Mathematics, German, and English must be taken within the first semester if a failing grade (*"Mangelhaft"* or lower grade) was achieved in these subjects.

Creditable subject areas from technical colleges and vocational high schools for approval by the degree program

School type	Department*	Crediting possible
Technical college (*Fachoberschule, FOS*)	Technology	Yes
	Economy & Administration	Yes
	Social Services	Yes
	Agriculture, Biotechnology, and Environmental Technology	Yes
	Design	Yes
	Health	Yes

	International Economy	Yes
Vocational high school (*Berufsoberschule, BOS*)	Technology	Yes
	Economy & Administration	Yes
	Social services	Yes
	Agriculture, Biotechnology, and Environmental Technology	Yes
	Health	Yes
	International Economy	Yes

**) In case of relevant internships (marketing, trade, administration), other subject areas can also be accepted (after consultation with and at the discretion of the degree program director).*