

Study regulations of the
Master's course

ERP Systems & Business Process Management

To obtain the academic degree

Master of Arts in Business,
abbreviated MA

as an appendix to the statutes of the
HOK | University of Applied Sciences Kufstein Tirol

Organizational form: part-time

Duration: 4 semesters

Scope: 120 ECTS

Places for beginners per academic year: 23

Version 1

Adopted by the Faculty on June 24, 2026

Program starts WS 2027/28

Table of Contents

1	Occupational Profiles.....	3
1.1	<i>Career opportunities.....</i>	3
1.2	<i>Qualification profile</i>	4
2	Curriculum	6
2.1	<i>Curriculum data</i>	6
2.2	<i>Curriculum matrix.....</i>	7
2.3	<i>Modularization.....</i>	11
3	Admission requirements.....	47

1 OCCUPATIONAL PROFILES

1.1 Career opportunities

Graduates of the program can pursue careers in the following fields:

(1) **Consultants in Organizational Consulting and IT/ERP Systems**

Consultants in the field of organizational management and ERP systems are distinguished by their extensive expertise and strong leadership skills. They quickly grasp their clients' operational environments and the tasks assigned to them. These include, among other things, planning and designing IT architectures, assisting in the development of IT strategies, and advising on the selection of suitable IT systems. In the organizational field, they develop organizational concepts, lead improvement projects, conduct audits, and support change management.

(2) **Information Management in Companies**

Information management refers to the management of information and communication within an organization. This encompasses design, operational, and control tasks that must be carried out against the backdrop of an increasingly dynamic business and competitive environment. In addition to fundamental knowledge of the structure and operating principles of IT systems and a solid understanding of the mechanisms driving a digital economy, this requires an increasing level of expertise in executing complex, multi-stakeholder restructuring processes within business organizations. Other areas of responsibility include auditing and leadership roles within a relevant company.

(3) **Project management of process improvement projects and IT/ERP projects**

Leading projects in the area of company-wide business excellence initiatives or ERP implementation and migration projects requires both leadership expertise and a comprehensive understanding of the possibilities and techniques of process management and information technology. Interpersonal skills—such as the ability to conduct difficult conversations, build acceptance, and facilitate solution workshops—are particularly important.

(4) **Process**

Manager

The process manager is responsible for sub-processes or end-to-end processes within the company. He or she aligns the process with strategic requirements and customer needs. He or she regularly monitors performance and initiates improvement projects, for which he or she also serves as a sponsor. In many companies, he or she forms a matrix structure with the existing line organization.

(5) **Process Coach/Process Support**

A process coach supports project managers, process managers, and line managers with methodological issues. The ever-growing array of technical and methodological tools that help boost performance in companies requires the expertise of proven specialists. They have knowledge of applying statistical process analysis tools, such as those used in Six Sigma and TQM, and have experience with Lean Management tools. Process coaches also assist in selecting process improvement projects. In addition, they advise project managers on implementation issues and on building acceptance for new organizational and IT solutions.

(6) **Quality**

Manager

Quality managers take the lead in deriving quality strategies from corporate guidelines. They help establish quality management systems within companies by documenting processes, defining quality criteria, conducting internal audits, preparing for external audits, and encouraging continuous improvement. They select appropriate quality assurance methods and train employees in their application.

(7) **Requirements Manager**

As a Requirements Manager, you serve as the link between business requirements and their implementation in IT/ERP solutions. The Requirements Manager understands business challenges and is familiar with the capabilities offered by modern information systems. By being familiar with the terminology and language of both fields, they bridge the communication gaps that frequently arise in practice. They lay the groundwork for IT/ERP projects to deliver results that lead to satisfied customers.

(8) Customizing ERP Systems

Standard business software is adapted (customized) to meet a company's specific requirements. Customization tasks are based on the company's unique characteristics. By configuring the parameters of ERP systems, they are tailored to the needs of the customers.

(9) Responsibility for ERP Modules

Responsibility for ERP modules requires detailed knowledge of a specific module. The development and, above all, further refinement of the module is the task of the module manager, who is involved in all decision-making processes—from conception through documentation to maintenance of the module.

1.2 Qualification profile

The qualification objectives and learning outcomes of the master's program [Topic] correspond to both academic and professional requirements and to ISCED level 0788 (International Standard Classification of Education). The content taught qualifies graduates for the professional fields of activity mentioned in previous chapters.

Professional Field	Task	Competency Description	Competency Mapping	Curriculum/Modules
Consultant in Organizational Consulting and IT/ERP Systems Information Manager	Planning and designing IT architectures. Assisting with the development of IT strategies Advising on the selection of IT systems Developing organizational concepts Leading improvement projects Conducting process audits	Understands business processes Can identify, document, analyze, and improve processes Can identify requirements for IT systems Familiar with ERP systems	Technical and Academic	Business processes ERP systems Process and quality management
		Can implement operational solutions and IT systems	Personnel and Social	Social Skills
Project management of process improvement, IT, and ERP projects	Project leadership Handling resistance Resolving conflicts Implementing Solutions	Can set up projects from an organizational perspective Can communicate with clients Can handle resistance within the project team and during implementation	Personal and Social	Social Skills

Process Manager, Quality Manager	Responsible for process performance Aligning process/quality with departmental strategy Setting process goals Monitoring performance Conducting audits Initiating improvements Implementing solutions	Understands the process Can break down overarching strategies into process/quality goals Can conduct process audits Is familiar with process improvement procedures Can handle conflicts between departments Can communicate new solutions to those affected	Technical and Scientific Interpersonal and social	Operational processes Process and quality management Social skills
Process Coach / Process Support	Defines PM methods Provides support in the application of PM methods Collects process data Organizes review meetings	Is familiar with PM methods Can collect and analyze process data Can design process dashboards	Technical and scientific	Process / Quality Management
Requirements Manager / ERP System Customization / Responsible for ERP Modules	Gathers business requirements for IT systems Creates specifications and requirements documents Communicates with the IT department Initiates the implementation of new releases	Can gather and prioritize requirements for IT systems Is familiar with the functionalities of ERP systems Can make modifications to the ERP system Can analyze and process data from ERP systems	Technical and Academic	ERP Systems Data Management IT management

2 CURRICULUM

2.1 Curriculum data

	PT	Any Comments
First Year of Study (YYYY/MM ₊₁)	2027/28	
Standard duration of study (Number of semesters)	4	
SWS (Total for all semesters)	53	
ASWS (Total for all semesters)	55	
ECTS (Total for all semesters)	120	
Winter Semester Start (Date, Note: possibly calendar week)	Calendar Week 40	
Winter semester end (Date, Note: possibly calendar week)	Calendar Week 5	
Start of summer semester (Date, Note: possibly calendar week)	Calendar Week 11	
End of semester (Date, Note: possibly calendar week)	Calendar Week 28	
Winter Semester Weeks	15	
SS weeks	15	
Mandatory semester abroad (Semester specification)	No	
Language of Instruction (Specify)	German	The percentage of specialized courses taught in English is 37,74 % of the total weekly class hours
Professional internship (Semester, duration in weeks per semester)	No	

2.2 Curriculum matrix

The curriculum matrix for the Master's program in ERP Systems & Business Process Management is presented below. The following list of courses does not include the time required for supervising Master's theses. For each thesis supervised, 0.6 SWS is allocated; that is, with 23 accredited study places, this represents an additional ASWS workload of 13.8 ASWS.

The program includes a large, customizable component worth 12 ECTS. Depending on their individual educational goals, students can choose lectures from four different degree tracks (DSIA bb, AISE, SPAI, ERP). These specializations are offered in the 3rd and 4th semesters.

1. Semester

Course no.	Course title	LV-Typ	T	E	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
BTP.1	Fundamentals ERP-Systems & Business Processes	ILV			1.5	1	1.5	22.5	BTP	3
ERP.1	ERP 1: Supply Chain Systems	ILV	X		3	1	3	45	ERP	6
ITM.1	IT Management, Security & Compliance	ILV			3	1	3	45	ITM	6
ITM.3	Requirements Engineering	ILV			1.5	1	1.5	22.5	ITM	3
PQM.2	Lean Quality Management (E)	ILV		X	3	1	3	45	PQM	5
PQM.3	Process Modelling & Optimization	ILV			3.5	1	3.5	52.5	PQM	7
Total line:					15.5		15.5	232.5		30
Course hours = Total WSH x course weeks					232.5					

2. Semester

Course no.	Course title	LV-Typ	T	E	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
DAT.1	Business Analytics: Fundamentals (E)	ILV	X	X	3	1	3	45	DAT	6
ERP.2	ERP 2: Finance and Control Systems	ILV	X		2	1	2	30	ERP	4
ITM.4	Process Digitalization	ILV	X		2	1	2	30	ITM	3
PQM.1	Process Management	ILV			2	1	2	30	PQM	4
PXT.2	Study Trip (E)	ILV		X	2	1	2	30	PXT	3
SSK.2	Presentation & Communication techniques	ILV			2.5	1	2.5	37.5	SSK	4
SSK.2	Project Management (E)	ILV		X	2	1	2	30	SSK	4
SSK.3	Change & Transformation Management	ILV			1	1	1	15	SSK	2
Total line:					16.5		16.5	247.5		30
Course hours = Total WSH x course weeks					247.5					

3. Semester

Course no.	Course title	LV-Typ	T	E	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
DAT.2	Business Analytics: Advanced (E)	ILV	X	X	4	1	4	60	DAT	6
ERP.3	ERP 3: Selection, Implementation, Customizing	ILV	X		3.5	1	3.5	52.5	ERP	6
ERP.4	Digitale Business Plattformen	ILV	X		2	1	2	30	ERP	4
MAS.1	Academic Methods	SE			1	1	1	15	MAS	2
PXT.1	Practical Project	PT			2	2	4	60	PXT	4
WPF.1	Quantitative Process & Quality Management (Six Sigma) (E) (WP)*	ILV		X	2	1	2	30	WPF	4
WPF.2	Application-oriented analysis platforms (elective)* (E) (WP)*	ILV	X	X	2	1	2	30	WPF	4
WPF.3	Internet of Things (elective)* (E) (WP)*	ILV	X	X	2	1	2	30	WPF	4
WPF.4	Operational & Strategic Management of Applications (WP)*	ILV	X	X	2	1	2	30	WPF	4
WPF.5	Process Automation (WP)* (E)	ILV	X	X	2	1	2	30	WPF	4
WPF.6	Data Visualization & Visual Analytics (elective)* (E) (WP)*	ILV		X	2	1	2	30	WPF	4
WPF.7	Digital Twin & Simulation (E) (WP)*	ILV		X	2	1	2	30	WPF	4
WPF.8	Human AI Interaction (WP)* (E)	ILV		X	2	1	2	30	WPF	4
Total line:					16.5		18.5	277.5		30
Course hours = Total WSH x course weeks					247.5					

4. Semester

Course no.	Course title	LV-Typ	T	E	WSH	No. of groups	ASWS	ALVS	MODUL	ECTS
ITM.4	IT architecture & system integration	ILV	X		1.5	1	1.5	22.5	ITM	3
MAS.2	Colloquium for the Master thesis	SE			1	1	1	15	MAS	2
MAS.3	Master Thesis	UE			0	1	0	0	MAS	22*
WPF.10	Trends in Data Science (elective)* (E) (WP)*	ILV		X	2	1	2	30	WPF	3
WPF.11	Trends in Smart Products(elective)* (E) (WP)*	ILV		X	2	1	2	30	WPF	3
WPF.12	Trends in AI Engineering (elective) (E) (WP)*	ILV		X	2	1	2	30	WPF	3
WPF.9	Trends in ERP (WP)* (E)	ILV		X	2	1	2	30	WPF	3
Total line:					4.5		4.5	67.5		30
Course hours = Total WSH x course weeks					67.5					

* The 22 ECTS credits for the master's thesis are divided into 20 ECTS credits for the thesis itself and 2 ECTS credits for the final oral examination.

Abbreviations	
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	53	55	825	120
Total number of courses in 1st year of study	32	32	480	60
Total number of courses in 2nd year of study	21	23	345	60
Total number of courses in 3rd year of study				
Total number of technical events over all semesters	25			46
Percentage of technical courses over all semesters based on WSH / ECTS	47.17 %			38.33 %
Total number of specialized courses in English over all semesters	20			35
Proportion of specialized courses in English over all semesters (Calculation excluding language courses)	37.74 %			29.17 %

2.3 Modularization

Module number:	Business Processes	Scope:	
BTP		3	ECTS
Degree program	University of Applied Sciences Master's Program ERP-Systems & Business Process Management part-time		
Position in the curriculum	1. Semester		
Level	1. Semester: Master		
Previous knowledge	1. Semester: None		
Blocked	no		
Participant group	Bachelor graduates, beginners		
Literature recommendation	<u>Fundamentals ERP-Systems & Business Processes /ILV / LV-Nr: BTP.1 / 1.Semester / ECTS: 3</u> * Gronau N.; ERP-Systeme. Aufbau, Funktionalität und Einführung; 2016; München; 4. Auflage * Hellmann R.; Rechnerarchitektur: Einführung in den Aufbau moderner Computer; 2021; Oldenburg; 2. Auflage * Schreiner R.; Computernetzwerke: Von den Grundlagen zur Funktion und Anwendung; 2023, München; neue Auflage		
Acquisition of skills	<u>Fundamentals ERP-Systems & Business Processes /ILV / LV-Nr: BTP.1 / 1.Semester / ECTS: 3</u> The participants: The participants: * Understands a company and is familiar with different company structures * Understands a company as a system of end-to-end processes * Knows the generic process steps of the most important business processes • Knows the interaction, data and documents, information exchange, and supporting documents of business processes * Knows KPIs and best practice processes • Knows the basic structure and modules of an ERP system * Knows the most important components of the ERP infrastructure (hardware platforms, operating systems, networks) * Knows developments in hardware platforms (mobile platforms, cloud computing, virtualization) * Knows ERP system architectures and deployment models (on-premise, cloud, hybrid, SaaS)		
Course contents	<u>Fundamentals ERP-Systems & Business Processes /ILV / LV-Nr: BTP.1 / 1.Semester / ECTS: 3</u> * Overview of a company from a process perspective (e-to-e-e processes) * Insights into the functional areas of a company (production, logistics, purchasing, sales, finance, controlling) * Transfer of organizational structures into an ERP system using SAP as an example * Components of the IT infrastructure (function of computer systems, networks) * Development of ERP system architectures and deployment models (on-premise, cloud, hybrid, SaaS)		
Teaching and learning methods	<u>Fundamentals ERP-Systems & Business Processes /ILV / LV-Nr: BTP.1 / 1.Semester / ECTS: 3</u> Lecture, Group Work, Case Study		
Evaluation Methods Criteria	<u>Fundamentals ERP-Systems & Business Processes /ILV / LV-Nr: BTP.1 / 1.Semester / ECTS: 3</u> Exam		

Module number:	Process and Quality Management	Scope:	
PQM		16	ECTS
Degree program	University of Applied Sciences Master's Program ERP-Systems & Business Process Management part-time		
Position in the curriculum	1. Semester		
	2. Semester		
Level	1. Semester: Master / 2. Semester: Master		
Previous knowledge	1. Semester: not applicable / 1. Semester: not specified / 2. Semester: not applicable		
Blocked	no		
Participant group	Bachelor graduates, beginners		
Literature recommendation	<u>Process Management /ILV / LV-Nr: PQM.1 / 2.Semester / ECTS: 4</u> * Hammer M., Champy J.; Reengineering the Cooperation; New York 1993 * Gaitanides M.; Prozessorganisation; München 2012; 3. Auflage * Osterloh M., Frost J.; Prozessmanagement als Kernkompetenz; Wiesbaden 2006; 5. Auflage * Becker J., Kugeler M., Rosemann M.; Prozessmanagement. Ein Leitfaden zur prozessorientierten Organisationsgestaltung; Heidelberg 2012; 7. Auflage * Gadatsch A.; Grundkurs Geschäftsprozess-Management; Wiesbaden 2017; 8. Auflage * Schmelzer H., Sesselmann W.; Geschäftsprozessmanagement in der Praxis; München 2013; 8. Auflage * Allweyer Th.; Geschäftsprozessmanagement; Herdecke-Bochum 2005		
	<u>Lean Quality Management (E) /ILV / LV-Nr: PQM.2 / 1.Semester / ECTS: 5</u> + Deming E.W; Out of the Crisis; Cambridge; 2000 + Shingo Sh.; Zero Quality Control: Source Inspection and the Poka-yoke System; 1989 + Takeda H.; QIP – Qualität im Prozess, Leitfaden zur Qualitätssteigerung in der Produktion; München, 2009		
	<u>Process Modelling & Optimization /ILV / LV-Nr: PQM.3 / 1.Semester / ECTS: 7</u> * Becker J., Kugeler M., Rosemann M.; Prozessmanagement. Ein Leitfaden zur prozessorientierten Organisationsgestaltung; Heidelberg 2012; 7. Auflage * Ohno T.; Toyota Production System, Beyond large scale production; 1988 * Liker J.; The Toyota Way; New York 2004 * Lunau St., Meran R., John A., Staudter Ch., Roenpage O.; Six Sigma+Lean Toolset: Mindset zur erfolgreichen Umsetzung von Verbesserungsprojekten; 2014; 5. Auflage * George M., Maxey J., Rowlands D., Upton M.; The Lean Six Sigma Pocket Toolbook: A Quick Reference Guide to 70 Tools for Improving Quality and Speed * Schmelzer, Hermann J.; Sesselmann, Wolfgang; Geschäftsprozessmanagement in der Praxis. Kunden zufriedenstellen. Produktivität steigern. Wert erhöhen. 9. Auflage. München/Wien: Hanser 2020 * Gadatsch, Andreas: Grundkurs Geschäftsprozessmanagement. Analyse, Modellierung, Optimierung und Controlling von Prozessen. 11. Auflage. Wiesbaden: Springer Vieweg 2025		
Acquisition of skills	<u>Process Management /ILV / LV-Nr: PQM.1 / 2.Semester / ECTS: 4</u> The graduate, the student: * Understands the benefits of process management. * Can select processes based on strategy and customer requirements. * Can visualize the process performance. * Can perform process audits. * Knows the roles in process management. * Can establish governance for a process. * Is familiar with various process improvement methods. * Knows how organizational interfaces can be overcome with the help of process management. * Is familiar with procedures for implementing process management.		
	<u>Lean Quality Management (E) /ILV / LV-Nr: PQM.2 / 1.Semester / ECTS: 5</u>		

	The graduate, the student: Quality management in general: * Knows the benefits of quality management * Knows important parameters for the evaluation of QM systems * Knows the difference between quality planning and quality control * Knows the importance of responsibility at company level * Knows the organizational anchoring of QM in the company * Knows the importance of leadership with regard to quality management * Knows processes of quality management (Deming-Cycle, etc.) * Understands the measures that are necessary in the absence of quality Lean Quality: * Understands the zero defect philosophy * Can determine quality costs (cost of poor quality) * Understands the importance of employees in quality management * Is familiar with organizational forms of operational quality management (end-of-line inspection, quality circle, etc.) * Is familiar with defect prevention systems (Poka Yoke, etc.) * Can conduct Poka-Yoke workshops * Can explain the relationship between quality and lead time * Can explain the effects of quality measures on inventory
	<u>Process Modelling & Optimization /ILV / LV-Nr: PQM.3 / 1.Semester / ECTS: 7</u> The graduate, the student: * Knows the problems of processes in companies * Knows sources of requirements for processes * Can derive measured variables and process goals from requirements

Acquisition of skills	* Can conduct process surveys * Knows types of process models and knows when to apply which ones * Can document processes in the most important notations (eEPK, BPMN, DIN) * Knows the most important process modeling software * Can apply selected SW for modeling * Can analyze actual processes * Knows the most important methods of Lean Management * Knows methods for finding solutions * Knows the most important process mining software
Course contents	<u>Process Management /ILV / LV-Nr: PQM.1 / 2.Semester / ECTS: 4</u> * Leveraging Process Management * Process Management Framework * Selecting Processes for Strategic Improvement * Visualizing Process Performance * Performing Process Audits * Establishing Process Governance * Process Interface Management * Implementing Process Management
	<u>Lean Quality Management (E) /ILV / LV-Nr: PQM.2 / 1.Semester / ECTS: 5</u> * The terms quality, quality assurance and quality management * Types and dimensions of quality * Conflict and the magic triangle of value-added systems * Reasons for quality management systems and their benefits * Historical development of quality management * Quality costs * Overview of methods, techniques, tools for implementing and anchoring QM
	<u>Process Modelling & Optimization /ILV / LV-Nr: PQM.3 / 1.Semester / ECTS: 7</u> * Identifying customer and business requirements * Modeling processes * Applying process modeling tools * Measuring process performance * Analyzing processes * Improving process performance
Teaching and learning methods	<u>Process Management /ILV / LV-Nr: PQM.1 / 2.Semester / ECTS: 4</u> Lecture, individual work on own processes, presentation and discussion of tasks
	<u>Lean Quality Management (E) /ILV / LV-Nr: PQM.2 / 1.Semester / ECTS: 5</u> Lecture, group work, simulation example in the LEAN Lab, presentation and discussion of tasks
	<u>Process Modelling & Optimization /ILV / LV-Nr: PQM.3 / 1.Semester / ECTS: 7</u> Lecture, group work, individual work with software, continuous simulation example in the LEAN Lab, presentation and discussion of tasks
Evaluation Methods Criteria	<u>Process Management /ILV / LV-Nr: PQM.1 / 2.Semester / ECTS: 4</u> Exam Presentation
	<u>Lean Quality Management (E) /ILV / LV-Nr: PQM.2 / 1.Semester / ECTS: 5</u> Exam
	<u>Process Modelling & Optimization /ILV / LV-Nr: PQM.3 / 1.Semester / ECTS: 7</u> Written exam

Module number:	IT Management	Scope:	
ITM		15	ECTS
Degree program	University of Applied Sciences Master's Program ERP-Systems & Business Process Management part-time		
Position in the curriculum	1. Semester		
	2. Semester		
	4. Semester		
Level	1. Semester: Master / 2. Semester: Master / 4. Semester: Master		
Previous knowledge	1. Semester: None / 1. Semester: not applicable / 2. Semester: not applicable / 4. Semester: None		
Blocked	no		
Participant group	Bachelor graduates, beginners		
Literature recommendation	<u>IT Management, Security & Compliance /ILV / LV-Nr: ITM.1 / 1.Semester / ECTS: 6</u> * Resch O.; Einführung in das IT-Management: Grundlagen, Umsetzung, Best Practice; 2024; 6. Auflage * Urbach N.; IT-Management im Zeitalter der Digitalisierung: Auf dem Weg zur IT-Organisation der Zukunft; Berlin, 2016 * Harich Th.; IT-Sicherheitsmanagement: Praxiswissen für IT Security Manager; Frechen; 2018; 3. Auflage * Tiemeyer, et.al.; Handbuch IT Management, 2023; 8. Auflage * Bertele M., Lehner F.; IT Compliance, Rechtliche Aspekte des IT Managements; 2013 * Schmidt K.; IT Security managen; 2024; 2. Auflage * Rentrop C.; IT-Governance; 2024		
	<u>IT architecture & system integration /ILV / LV-Nr: ITM.4 / 4.Semester / ECTS: 3</u> * Lankhorst M.; Enterprise Architecture at Work: Modelling, Communication and Analysis; 2021; 5. Auflage * Keller D., Herold S.; SAP Business Technology Platform: Architektur, Services, Integration und Erweiterung; 2021 * Linthicum D.; Enterprise Integration: The Essential Guide to Integration Solutions; 2022; 3. Auflage * The Open Group; TOGAF® Standard, 10th Edition – Foundation Study Guide; 2023; 22. Auflage		
	<u>Process Digitalization /ILV / LV-Nr: ITM.4 / 2.Semester / ECTS: 3</u> * Weske, M.: Business Process Management, Springer, 2016 * Gadatsch, A.: Grundkurs Geschäftsprozessmanagement, Springer, 2013 * Allweyer, Th.: Geschäftsprozessmanagement, Springer, 2020 * Taulli, T.: The Robotic Process Automation Handbook, Springer, 2020 * van der Aalst, W.: Process Mining: Data Science in Action, Springer, 2016 * Langmann, C. & Turi, D.: Robotic Process Automation – Digitization and Automation of Processes, Springer, 2022 * Smeets, M. R.: Robotic Process Automation in Use, Springer, 2024 * Richter-von Hagen, C., Stucky, W.: Business-Process- und Workflow-Management, Teubner, 2005 * Fischermanns, G.: Praxishandbuch Prozessmanagement, Dr. Götz Schmidt, 2013 * Digitalization in Companies: From Theoretical Approaches to Practical Implementation, Springer, 2024		
Acquisition of skills	<u>Requirements Engineering /ILV / LV-Nr: ITM.3 / 1.Semester / ECTS: 3</u> * Rupp C. et al.: Requirements-Engineering und –Management, Carl Hanser Verlag, 2014 * Hammerschall U., Beneken G.: Requirements Engineering, Pearson Studium, 2013 * Pohl K., Rupp C.: Basiswissen Requirements Engineering, dpunkt Verlag, 2015		
	<u>IT Management, Security & Compliance /ILV / LV-Nr: ITM.1 / 1.Semester / ECTS: 6</u> The participants: The participants: * Understands the elements of IT governance * Understands the importance of IT strategy * Understands the structure and organization of IT departments * Understands the essential elements of demand management * Has an overview of IT controlling instruments and their interaction with IT governance * Understands the importance of IT security (types of threats, cybersecurity, measures, standards, legal framework, audits) * Understands the tasks of IT risk management (risk assessment, measures, disaster recovery) * Understands the necessity and measures for IT compliance (objectives, compliance regulations, tasks) * Understands important aspects of data protection law (specifics regarding the handling of personal data, anonymization, etc.) * Understands essential regulatory requirements for security and compliance * Understands frameworks that aim for IT strategy/governance/compliance		
	<u>IT architecture & system integration /ILV / LV-Nr: ITM.4 / 4.Semester / ECTS: 3</u>		

	The participants: * Understand fundamental concepts of IT architecture, system integration, and enterprise architecture management (EAM) * Understand the importance of EAM for the strategic management of the IT landscape and its impact on business processes * Can analyze integration architectures between ERP and peripheral systems (e.g., CRM, SRM) and assess their impact on process continuity * Can develop integration scenarios between ERP systems and peripheral systems using typical interface models (e.g., APIs, IDocs, REST, OData) * Can evaluate existing IT architectures with regard to integration capability, modularity, and process continuity * Can evaluate various architectural approaches (e.g., monolithic, service-oriented, cloud-native) and platform
--	---

Acquisition of skills	strategies (e.g., SAP BTP, Azure, AWS) * Can design an architectural concept for an integrated system landscape in the ERP context, taking into account EAM principles, interface management, and cloud technologies
	<u>Process Digitalization /ILV / LV-Nr: ITM.4 / 2.Semester / ECTS: 3</u> The graduate, the student: * Knows the role of IT as a process enabler (benefits) * Knows types of workflow systems * Knows basic components of workflow automation in connection with workflow management and process monitoring * Knows the importance of Robotic Process Automation (RPA) * Knows the most important software providers for WFMS and RPA * Can model processes consistently (e.g. BPMN -> BPEL) * Can identify, systematize and solve topic-related questions with suitable software tools * Can create workflows in selected software
	<u>Requirements Engineering /ILV / LV-Nr: ITM.3 / 1.Semester / ECTS: 3</u> The graduate, the student: * Knows the importance of requirements engineering for the success of a project * Knows different types of requirements (functional, non-functional) * Can take up requirements for ERP, CRM, SCM, SRM systems from business (specification sheet) * Knows the process of requirements engineering * Knows methods to collect customer requirements (e.g. questionnaires, interviews) * Can document requirements (natural, linguistic and model-based) * Can derive test cases from requirements * Can evaluate requirements * Knows methods for validating requirements (e.g. quality criteria for requirements, testing techniques for requirements [reviews, prototypes, tests]) * Can manage the implementation of the requirements
Course contents	<u>IT Management, Security & Compliance /ILV / LV-Nr: ITM.1 / 1.Semester / ECTS: 6</u> • Elements of IT governance, IT strategy • Role of IT as a cost center / service center / profit center • Organizational forms of the IT department • Operation and further development of software in IT (plan, build, run) • IT budget, KPIs for IT management, IT performance billing • IT procurement (make-or-buy) • IT outsourcing and contract management
	<u>IT architecture & system integration /ILV / LV-Nr: ITM.4 / 4.Semester / ECTS: 3</u> * Goals, principles, and layers of IT architectures * Architectural styles: monolithic, SOA, microservices, event-driven, cloud-native * Role of IT architecture in the ERP and process management context * Definition, goals, and benefits of EAM * EAM frameworks: TOGAF, Zachman, ArchiMate * Governance, architecture repositories, and EAM tools (e.g., LeanIX, Alfabet) * Strategic alignment of IT landscapes and roadmapping * System integration types: data, functional, and process integration * Interface types: batch, EDI, web services, APIs, messaging * Middleware, API management, ESB, and iPaaS (Integration Platform as a Service) * Challenges: data consistency, security, performance * Architecture and components of SAP BTP * BTP - Integration Suite, Extension Suite, Workflow Management * Example use cases (e.g., SAP integration) S/4HANA and non-SAP systems * Low code and pro-code approaches at BTP
	<u>Process Digitalization /ILV / LV-Nr: ITM.4 / 2.Semester / ECTS: 3</u> Basic Concepts: * Business process, process management, workflow, BPMS, WFMS, RPA, low-code/no-code, process mining, hyper-automation Classification and Differentiation * WFMS, BPMS, RPA, AI platforms, low-code tools * Interfaces and integration with ERP/CRM systems Development and Trends * From WFMS → BPMS → RPA → hyperautomation * Digital transformation and the impact of AI Architecture of digital process systems * Process engine, orchestrator, bots, APIs, connectors * Cloud architectures, security, governance Process spectrum and degree of automation * Repetitive – variable – knowledge-based * Selection criteria and potential assessment From business-oriented to digital process models * BPMN 2.0, model transformation, executable models * Connecting data logic and interfaces

	<u>Requirements Engineering /ILV / LV-Nr: ITM.3 / 1.Semester / ECTS: 3</u> * Benefits of requirements engineering * Basic terms of requirements engineering * Types of requirements * Requirements engineering and system development
--	---

Course contents	* Requirements engineering process * System analysis in requirements engineering * Business processes and requirements * Techniques for determining requirements * Natural language documentation of requirements * Model-based documentation of requirements * Deriving test cases from requirements * Evaluating requirements * Quality criteria for requirements * Checking requirements * Managing requirements * Tool support
Teaching and learning methods	<u>IT Management, Security & Compliance /ILV / LV-Nr: ITM.1 / 1.Semester / ECTS: 6</u> Lecture, discussions, exercise
	<u>IT architecture & system integration /ILV / LV-Nr: ITM.4 / 4.Semester / ECTS: 3</u> integrative course
	<u>Process Digitalization /ILV / LV-Nr: ITM.4 / 2.Semester / ECTS: 3</u> Lecture, individual work with software, group work, presentation and discussion of tasks
	<u>Requirements Engineering /ILV / LV-Nr: ITM.3 / 1.Semester / ECTS: 3</u> Lecture, group work, presentation and discussion of tasks
Evaluation Methods Criteria	<u>IT Management, Security & Compliance /ILV / LV-Nr: ITM.1 / 1.Semester / ECTS: 6</u> Exam
	<u>IT architecture & system integration /ILV / LV-Nr: ITM.4 / 4.Semester / ECTS: 3</u> Exam
	<u>Process Digitalization /ILV / LV-Nr: ITM.4 / 2.Semester / ECTS: 3</u> Written exam
	<u>Requirements Engineering /ILV / LV-Nr: ITM.3 / 1.Semester / ECTS: 3</u> Exam Presentation

Module number:	ERP - Systems	Scope:	
ERP		20	ECTS
Degree program	University of Applied Sciences Master's Program ERP-Systems & Business Process Management part-time		
Position in the curriculum	1. Semester		
	2. Semester		
	3. Semester		
Level	1. Semester: Master / 2. Semester: Master / 3. Semester: Master / 3. Semester: Master`s course		
Previous knowledge	1. Semester: not applicable / 2. Semester: not applicable / 3. Semester: None / 3. Semester: not applicable		
Blocked	no		
Participant group	Bachelor graduates, beginners		
Literature recommendation	<u>ERP 1: Supply Chain Systems /ILV / LV-Nr: ERP.1 / 1.Semester / ECTS: 6</u> * Mertens, P.; Integrierte Informationsverarbeitung 1: Operative Systeme in der Industrie; Wiesbaden, Gabler 2009 * Benz, J.; Höflinger, M.; Logistikprozesse mit SAP.Vieweg + Teubner Verlag; 2005 * Körsgen, F.; SAP ERP Arbeitsbuch: Grundkurs SAP ERP ECC 5.0 / 6.0 mit Fallstudien; Erich Schmidt Verlag		
	<u>ERP 2: Finance and Control Systems /ILV / LV-Nr: ERP.2 / 2.Semester / ECTS: 4</u> * Mertens, P; Integrierte Informationsverarbeitung 2: Planungs- und Kontrollsysteme in der Industrie.- Wiesbaden: Gabler, 2008 * Körsgen, F.; SAP ERP Arbeitsbuch: Grundkurs SAP ERP ECC 5.0 / 6.0 mit Fallstudien; Erich Schmidt Verlag * Brinkmann S., Zeilinger A.; Finanzwesen mit SAP R/3 - Betriebswirtschaftliches Customizingwissen für SAP-FI Release 4.0/4.6. 2. erw. Aufl., Galileo Press, Bonn, 2000 * Klenger F., Falk-Kalms E.; Kostenstellenrechnung mit SAP R/3. Mit Testbeispiel und Customizing für Studenten und Praktiker; Vieweg, Wiesbaden; 2005		
	<u>ERP 3: Selection, Implementation, Customizing /ILV / LV-Nr: ERP.3 / 3.Semester / ECTS: 6</u> * Gronau N.; Enterprise Resource Planing: Architektur, Funktionen und Management von ERP – Systemen; München; 2014; 3. Auflage * Görtz M., Hessler M.; Basiswissen ERP-Systeme; Witten; 2007 * Lanninger V.; Prozessmodell zur Auswahl betrieblicher Standardanwendungs- software für KMU; Lohmar; 2009 * Kähkönen, T. et al.: What Do We Know About ERP Integration? International Conference on Enterprise Information Systems. pp. 51–67 (2013)		
	<u>Digitale Business Plattformen /ILV / LV-Nr: ERP.4 / 3.Semester / ECTS: 4</u> * Laudon, K., Laudon, J.; Management Information Systems: Managing the Digital Firm; 2022; 17. Auflage * Wortmann, F., Böhm, M.; Digital Business Plattformen: Understanding the Basics; 2021 * Turban, E., Pollard, C., Wood G.; nformation Technology for Management: On-Demand Strategies for Performance, Growth and Sustainability; 2022; 12. Auflage * Cusumano M., Gewer A.; The Business of Platforms: Strategy in the Age of Digital Competition, Innovation and Power; 2019		
Acquisition of skills	<u>ERP 1: Supply Chain Systems /ILV / LV-Nr: ERP.1 / 1.Semester / ECTS: 6</u> Graduates/students: ERP-Systems in general: * can provide the benefit of ERP – Systems (large, important, etc.) * know the characteristics of ERP-Systems (multitenant, etc.) * know the structure of ERP-Systems (layer model) * know the most important producers and tools of ERP Systems * know functions of ERP-Systems * know most important producers of ERP-Systems, tools * know SAP (history, most important terms, etc.) * know reference processes in SAP SAP – Module Sales & Distribution, Material Management, Production: * know reference processes for SD; MM, PP in SAP * can execute procurement cycle for stocked material and consumables, including ordering requisitions, orders, receipt of goods, receipt of invoice and vendor payment * know organizational levels and master data of material planning as well as of planned and consumption-based disposition * know continuity of process adaptation -> adaptation SAP (fields, functions, etc.)		
	<u>ERP 2: Finance and Control Systems /ILV / LV-Nr: ERP.2 / 2.Semester / ECTS: 4</u>		

	The graduate, the student: SAP - Finance and Monitoring module: * Knows organizational levels and master data in financial accounting and management accounting * Can create master data in the SAP modules FI and CO * Can make basic postings * Knows reference processes for monitoring, finance and accounting in SAP
	<u>ERP 3: Selection, Implementation, Customizing /ILV / LV-Nr: ERP.3 / 3.Semester / ECTS: 6</u> The graduate, the student: * Is familiar with the development of ERP systems and the demarcation to enterprise system * Is familiar with the most important phases of the ERP life cycle

Acquisition of skills	* Is familiar with common ERP systems * Can select ERP systems (criteria, etc.) * Can analyze the usefulness of an existing ERP system for companies * Is familiar with procedures for the implementation of ERP systems (SAP-ASAP, etc.) * Knows how to implement ERP systems (SAP-ASAP, etc.) * Knows elements of the deployment process (introduction, migration, information, documentation, training) * Is familiar with procedures for testing ERP systems (functional tests, usability tests, etc.) * Knows different license models After the basic courses, students will gain an insight into another common ERP system via SAP. * Has an overview of ERP product ranges of a third-party supplier * Knows basic functionalities of the third-party supplier * Can perform selected transactions in the third-party supplier's software * Knows advantages/disadvantages between SAP and the third-party supplier <u>Digitale Business Plattformen /ILV / LV-Nr: ERP.4 / 3.Semester / ECTS: 4</u> The participants: The participants: * Understand the key terms, components, and system types of digital business platforms (ERP, CRM, SRM, BI, SCM) * Understand the relationships between core ERP systems and their peripheral systems within integrated process chains * Understand the most important functionalities of CRM and SRM systems * Can demonstrate the basic functionalities of another ERP system (e.g., MS Business Central) using practical scenarios * Can describe integration architectures between ERP and peripheral systems (e.g., CRM, SRM) and evaluate their impact on process continuity
Course contents	<u>ERP 1: Supply Chain Systems /ILV / LV-Nr: ERP.1 / 1.Semester / ECTS: 6</u> * Operational requirements in information management operational and planning tasks * Overview of the structure and functional scope of typical ERP systems (company codes, business areas, processes) * Integration of the individual modules of an ERP system * Overview of ERP system SAP ERP, SAP S4/ Hana, etc. * Specialization in the SAP modules SD, MM, PP. <u>ERP 2: Finance and Control Systems /ILV / LV-Nr: ERP.2 / 2.Semester / ECTS: 4</u> * Modules for presenting information to decision makers * Preparation of information for corporate planning and monitoring * Introduction to SAP modules FI and CO <u>ERP 3: Selection, Implementation, Customizing /ILV / LV-Nr: ERP.3 / 3.Semester / ECTS: 6</u> * ERP life cycle * Overview of ERP systems * Criteria for selecting ERP systems * Procedures for implementing ERP systems * Procedure for testing ERP systems * Licensing models * Overview of third-party product range (in addition to SAP) * Basic functionality of the third-party vendor * Selected transactions in the third-party vendor's software * Advantages/disadvantages between SAP and the third-party vendor <u>Digitale Business Plattformen /ILV / LV-Nr: ERP.4 / 3.Semester / ECTS: 4</u> * Get to know another ERP system (functional logic, user interface, data model, reporting) * CRM systems (customer loyalty, sales, marketing automation) * SRM systems (supplier integration, purchasing, procurement)
Teaching and learning methods	<u>ERP 1: Supply Chain Systems /ILV / LV-Nr: ERP.1 / 1.Semester / ECTS: 6</u> Lecture, individual work with software, group work, presentation and discussion of tasks <u>ERP 2: Finance and Control Systems /ILV / LV-Nr: ERP.2 / 2.Semester / ECTS: 4</u> Lecture, group work, presentation and task discussion <u>ERP 3: Selection, Implementation, Customizing /ILV / LV-Nr: ERP.3 / 3.Semester / ECTS: 6</u> Lecture, individual work with software, group work, presentation and discussion of tasks <u>Digitale Business Plattformen /ILV / LV-Nr: ERP.4 / 3.Semester / ECTS: 4</u> integrated courses
Evaluation Methods Criteria	<u>ERP 1: Supply Chain Systems /ILV / LV-Nr: ERP.1 / 1.Semester / ECTS: 6</u> Written exam

	<u>ERP 2: Finance and Control Systems /ILV / LV-Nr: ERP.2 / 2.Semester / ECTS: 4</u> Written exam
	<u>ERP 3: Selection, Implementation, Customizing /ILV / LV-Nr: ERP.3 / 3.Semester / ECTS: 6</u> Written exam

Evaluation Methods Criteria	<u>Digitale Business Plattformen /ILV / LV-Nr: ERP.4 / 3.Semester / ECTS: 4</u> Exam
-----------------------------	---

Module number:	Social Skills	Scope:	
SSK		10	ECTS
Degree program	University of Applied Sciences Master's Program ERP-Systems & Business Process Management part-time		
Position in the curriculum	2. Semester		
Level	2. Semester: Master		
Previous knowledge	2. Semester: not applicable		
Blocked	no		
Participant group	Bachelor graduates, beginners		
Literature recommendation	<u>Presentation & Communication techniques /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u> - Seifert, J. W.; Visualisieren – Präsentieren – Moderieren. Der Klassiker; 2022; 43. Auflage - Sprenger O.; Kommunikation im Unternehmen; 2023 - Duarte N.; HBR Guide to Persuasive Presentations (HBR Guide Series): Inspire action Engage the audience. Sell your idea; 2012 - Karia A.; How to Design TED Worthy Presentation Slides; 2015		
	<u>Change & Transformation Management /ILV / LV-Nr: SSK.3 / 2.Semester / ECTS: 2</u> * Doppler K., Lauterburg Ch.; Change Management: Den Unternehmenswandel gestalten; Campus, 13. Auflage, 2014 * Berner W.; Change!: 15 Fallstudien zu Sanierung, Turnaround, Prozessoptimierung, Reorganisation und Kulturveränderung, Schäfer * * Poschl, 2. Auflage, 2015 * Kotter J.P.; Leading Change; Harvard; 2012		
	<u>Project Management (E) /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u> - Wysocki R., et al.: Effective Project Management; Wiley 2019; 8th edition * Sutherland J., Sutherland J.J.; Scrum: The Art of Doing Twice the Work in Half the Time; London; 2014 * Goodpasture J.; Project Management the Agile Way: Making it Work in the Enterprise; Plantation; 2nd edition; 2016 * N.N.; A Guide to the Project Management Book of Knowledge (PMBOOK); 2021; 7th edition * Banks-Grasedyk G. et. al; Successfully managing S4/Hana Projects; 2022 * Lafond Sylvain; Successfully implementing ERP; 2024; 2nd edition * Shaping the Future of Project Management With AI: Charting Your AI Upskilling Journey with AI (2023). * Alam, D., & Gühl, U. (2022). Project Management for Practice: A Guide and Toolbox for Successful Projects (2nd ed.). Springer Berlin Heidelberg * Baine, K. (2024). AI-Driven Project Management: Harnessing the Power of Artificial Intelligence and ChatGPT to Achieve Peak Productivity and Success. John Wiley & Sons.		
Acquisition of skills	<u>Presentation & Communication techniques /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u> The graduate, the student: Presenting: * Is familiar with the structure of a presentation * Knows principles for the use of classical presentation media * Knows how to use presentation media (flipchart, pinboard, ppt) * Knows principles for effective visualization (moderation font and pictograms) * Can produce presentation documents (flipchart, Power Point) * Knows the basics of presentation rhetoric * Knows techniques regarding stance, voice, language and knows his or her characteristics and strengths in a presentation Moderating: * Can plan and prepare workshops in a target-oriented way * Knows the phases of a moderation * Knows what is important when moderating a workshop * Knows the classic moderation techniques (card request, flashlight, icebreakers) Communicating: * Familiar with key communication models (e.g., Schulz von Thun, Watzlawick, transactional analysis) * Understands the fundamentals of solution-oriented and respectful communication * Understands the causes and dynamics of conflicts in projects * Can communicate effectively with management, specialist departments, and IT staff * Can conduct goal-oriented feedback and conflict resolution discussions * Can develop communication strategies for change and transformation processes in the ERP context * Understands the characteristics of solution-oriented negotiations * Understands the causes of conflicts in communication		

	<u>Change & Transformation Management /ILV / LV-Nr: SSK.3 / 2.Semester / ECTS: 2</u> The graduate, the student: * Knows the importance of change management for improving processes and for the introduction of ERP systems * Knows the most important approaches, models and terms * Understands the individual and social aspects of change and knows the main causes of resistance and conflicts * Knows process models or methods, techniques and tools for change management * Can integrate the topic of change management in change projects and can apply process models or methods, techniques and tools to specific practical cases
	<u>Project Management (E) /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u> The graduate, the student: * Knows project management techniques * Knows project stages and project results * Can plan project goals, scope, tasks, duration and resources * Knows roles and participants in projects

Acquisition of skills	* Can design a project organization * Can lead project meetings * Can monitor progress in projects * Can communicate with stakeholders * Knows IT support for project management * Knows the benefits of frameworks such as PMA and PMI * Knows tasks and techniques of multi-project management
Course contents	<u>Presentation & Communication techniques /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u> Facilitation: * Facilitation writing exercises, flip chart design, pinboard layout, pictogram design, standard visualizations * Stance, voice, speech, presentation style, and handling disruptions Presentation: * Presentation techniques * Structuring presentations * Presenting to a specific audience Communication: * Solution-focused communication * Causes of conflict * Methods for dealing with conflict * Negotiation techniques * Classic negotiation models * Structuring model for conducting negotiations <u>Change & Transformation Management /ILV / LV-Nr: SSK.3 / 2.Semester / ECTS: 2</u> * Importance of change management * Individual and social aspects of change * Resistance, conflict and crisis * Basic approaches to change management * Types of change * Models of change (e.g. Lewin, GE-CAP, etc.) * (Project) management of change: Generic phase model and integration in projects * Techniques and tools of change (e.g. target circle, change stretch, WIIFM, Empathy Map, etc.) <u>Project Management (E) /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u> Recap basics of project management with focus on Lean Six Sigma process improvement projects * Set up a project (goals, scope, timeline, etc.) * Planning of deliverables, tasks, time, and resources * Set up and manage project team and communication with stakeholders * Controlling deliverables, risks, quality, time and budget Agile Project Management methods: * Understanding challenges in traditional project management * Overview of Scrum Framework and agile Values and principles * Simulation: Scrum Roles, Events, Artefacts * Release management in agile Projects * Hybrid project Management approaches * Outlook additional agile Methods AI and Project Management: * Use of AI in project initiation (e.g., forecasting, business case analysis), planning (e.g., scheduling, resource optimization), execution, and monitoring. * Automating documentation, reporting, and risk prediction. * Leadership and Ethics in the Age of AI * Managing change, bias, and accountability when implementing AI tools. * Fostering digital literacy and responsible innovation within project teams.
Teaching and learning methods	<u>Presentation & Communication techniques /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u> Lecture, group work, presentation and discussion of tasks <u>Change & Transformation Management /ILV / LV-Nr: SSK.3 / 2.Semester / ECTS: 2</u> Lecture, individual work, group work, presentation and discussion of tasks <u>Project Management (E) /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u> Lecture, group work, presentation and discussion of tasks
Evaluation Methods Criteria	<u>Presentation & Communication techniques /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u> Presentation <u>Change & Transformation Management /ILV / LV-Nr: SSK.3 / 2.Semester / ECTS: 2</u>

	Exam
	Presentation
	<u>Project Management (E) /ILV / LV-Nr: SSK.2 / 2.Semester / ECTS: 4</u>
	Written exam

Module number:	Data Management	Scope:	
DAT		12	ECTS
Degree program	University of Applied Sciences Master's Program ERP-Systems & Business Process Management part-time		
Position in the curriculum	2. Semester		
	3. Semester		
Level	2. Semester: Master / 3. Semester: Master`s course		
Previous knowledge	2. Semester: not applicable / 3. Semester: not applicable		
Blocked	no		
Participant group	Bachelor graduates, beginners		
Literature recommendation	<u>Business Analytics: Fundamentals (E) /ILV / LV-Nr: DAT.1 / 2.Semester / ECTS: 6</u> * Ramez Elmasri and Shamkant Navathe, Fundamentals of database systems, Prentice Hall, 2016 * Connolly Th. et al.; Datenbanksysteme; Addison-Wesley; 2002 * Dyche J.; e-Data; Addison-Wesley; 2000 * Bauer A., Günzel, H.; Data Warehouse Systeme; dpunkt; 2013 * Clausen N.; OLAP; Addison-Wesley; 1998 * Messerschmidt H., Schweinsberg K.; OLAP mit dem SQL Server; dpunkt; 2003 * Connolly Th., et al; Datenbanksysteme; Addison-Wesley; 2002 * Elmasri R., Shamkant N.; Grundlagen von Datenbanksystemen; Addison-Wesley; 2002		
	<u>Business Analytics: Advanced (E) /ILV / LV-Nr: DAT.2 / 3.Semester / ECTS: 6</u> * Runkler Th.; Information Mining; vieweg; 2000 * Langit L.; Smart Business Intelligence Solutions with Microsoft SQL Server; Microsoft Press; 2008 * Petersohn H.; Data Mining; Oldenbourg; 2005 * Provost F., Fawcett T.; Data Science for Business; O'Reilly; 2013 * Milton M.; Head First Data Analysis; O'Reilly; 2009		
Acquisition of skills	<u>Business Analytics: Fundamentals (E) /ILV / LV-Nr: DAT.1 / 2.Semester / ECTS: 6</u> Graduates/students: * Knows ERP-specific requirements of content and organizational nature * Can design databases (normalization, specific content) * Can implement databases (indexing, filegroups, partitioning, indexed views, etc.) * Knows the components and design options of the physical environment of databases (hardware) * Can implement defined processes in databases * Knows ways to back up data * Can log data access and implement a access strategy * Knows ways to ensure the availability of data (monitoring, logging, clustering, RAID, etc.) * Knows performance-relevant criteria * Knows the most important database manufacturers and their products * Knows Life Cycle of Data * Knows interfaces and their problems		
	<u>Business Analytics: Advanced (E) /ILV / LV-Nr: DAT.2 / 3.Semester / ECTS: 6</u>		

	Graduates/students: Datawarehousing: * Knows classification and demarcation of data warehousing, OLAP, data mining and reporting in the field of business intelligence * Knows areas of application and potential use of data warehousing, OLAP and data mining * Can assess areas of application and fields of application * Can record reporting requests from business * Can convert Reporting Requirements into Data Models * Can design and implement data warehouse databases * Knows different data formats / interface formats * Knows methods of data conversion * Can convert data * Can load a data warehouse * Knows OLAP - Terms * Can design and implement OLAP cubes * Can design access to OLAP cubes Datamining / Data Science: * Knows Datamining and Data Science algorithms and techniques * Knows the data mining / data science process * Can process the data for data mining * Can apply data mining methods to problems * Can present the results from data mining * Can create simple rules * Can implement/customize selected algorithms * Knows BI - Functionalities of ERP Systems * Knows products and manufacturers of BI solutions (backend, frontend) (Microsoft, Oracle, SAP, Infor, Crystal Report, etc.) Process Mining: * Knows goals of Process Mining
--	--

Acquisition of skills	* Knows prerequisites for process mining * Knows benefits, limitations, application areas of Process Mining * Has an overview of Process Mining Software
Course contents	<u>Business Analytics: Fundamentals (E) /ILV / LV-Nr: DAT.1 / 2.Semester / ECTS: 6</u> * Distributed databases * distributed database management system (DDBMS) * transaction management in DDBMS * synchronization and recovery in DDBMS * database management in ERP-systems.
	<u>Business Analytics: Advanced (E) /ILV / LV-Nr: DAT.2 / 3.Semester / ECTS: 6</u> * Concept of business intelligence and specific aspects such as datawarehouse, OLAP. * ETL, ELT - process * Methods and techniques of data mining * Techniques and up-to-date tools in the field of data warehousing & data mining * Case studies or projects in the subject area with practical application of tools * Tools / Vendors in the field of business intelligence
Teaching and learning methods	<u>Business Analytics: Fundamentals (E) /ILV / LV-Nr: DAT.1 / 2.Semester / ECTS: 6</u> Lecture, individual work with software, group work, presentation and discussion of tasks
	<u>Business Analytics: Advanced (E) /ILV / LV-Nr: DAT.2 / 3.Semester / ECTS: 6</u> Lecture, individual work with software, group work, presentation and discussion of tasks
Evaluation Methods Criteria	<u>Business Analytics: Fundamentals (E) /ILV / LV-Nr: DAT.1 / 2.Semester / ECTS: 6</u> Written exam
	<u>Business Analytics: Advanced (E) /ILV / LV-Nr: DAT.2 / 3.Semester / ECTS: 6</u> Written exam

Module number:	Transfer	Scope:	
PXT		7	ECTS
Degree program	University of Applied Sciences Master's Program ERP-Systems & Business Process Management part-time		
Position in the curriculum	2. Semester		
	3. Semester		
Level	2. Semester: Master / 3. Semester: Master`s course		
Previous knowledge	2. Semester: none / 3. Semester: not applicable		
Blocked	no		
Participant group	Bachelor graduates, beginners		
Literature recommendation	<u>Study Trip (E) /ILV / LV-Nr: PXT.2 / 2.Semester / ECTS: 3</u> * Wysocki R., et al: Effective Project Management; Wiley 2013; 7th edition * Goodpasture J.; Project Management the Agile Way: Making it Work in the Enterprise; Plantation; 2016		
	<u>Practical Project /PT / LV-Nr: PXT.1 / 3.Semester / ECTS: 4</u> * Wysocki R., et al.: Effective Project Management; Wiley 2013; 7th edition * Goodpasture J.; Project Management the Agile Way: Making it Work in the Enterprise; Plantation; 2016		
Acquisition of skills	<u>Study Trip (E) /ILV / LV-Nr: PXT.2 / 2.Semester / ECTS: 3</u> The graduate, the student: * Knows cultural/country-specific characteristics of corporate organizations * Knows cultural influences on process improvement projects * Knows country-specific differences in the selection and implementation of ERP systems		
	<u>Practical Project /PT / LV-Nr: PXT.1 / 3.Semester / ECTS: 4</u> Graduates/students: * can manage IT and process improvement projects * can structure projects/project teams (results, times, resources) * know the duties and responsibilities as project team member.		
Course contents	<u>Study Trip (E) /ILV / LV-Nr: PXT.2 / 2.Semester / ECTS: 3</u> * Cultural/country-specific characteristics of corporate organizations * Cultural influences on process improvement projects * Country-specific differences in the selection and implementation of ERP systems		
	<u>Practical Project /PT / LV-Nr: PXT.1 / 3.Semester / ECTS: 4</u> * Working through a specific ERP systems/process management project with a real client in a team * Conducting IT/process analysis * Developing system specifications/requirements/functional specifications or process improvement solutions * Creating all relevant project (process) documents and product documentation.		
Teaching and learning methods	<u>Study Trip (E) /ILV / LV-Nr: PXT.2 / 2.Semester / ECTS: 3</u> none		
	<u>Practical Project /PT / LV-Nr: PXT.1 / 3.Semester / ECTS: 4</u> Group work		
Evaluation Methods Criteria	<u>Study Trip (E) /ILV / LV-Nr: PXT.2 / 2.Semester / ECTS: 3</u> Report		
	<u>Practical Project /PT / LV-Nr: PXT.1 / 3.Semester / ECTS: 4</u> Project		

Module number:	Elective	Scope:	
WPF		11	ECTS
Degree program	University of Applied Sciences Master's Program ERP-Systems & Business Process Management part-time		
Position in the curriculum	3. Semester		
	4. Semester		
Level	3. Semester: Master / 3. Semester: Master`s course / 4. Semester: Master / 4. Semester: Master`s course		
Previous knowledge	3. Semester: keine / 3. Semester: none / 3. Semester: None / 3. Semester: not applicable / 4. Semester: none / 4. Semester: not applicable		
Blocked	no		
Participant group	Bachelor graduates, beginners		
Literature recommendation	<u>Quantitative Process & Quality Management (Six Sigma) (E) (WP)* /ILV / LV-Nr: WPF.1 / 3.Semester / ECTS: 4</u> * Töpferer, A.; Six Sigma Konzeption und Erfolgsbeispiele für praktizierende Null-Fehler-Qualität; Berlin/Heidelberg/New York 2007; 4. Auflage * George M.; Rowlands D.; Price M.; Maxey J.; The Lean Six Sigma Pocket Toolbook; New York; 2005 * Lunau St. (Hrsg.); Six Sigma + Lean Toolset; 5. Auflage; Heidelberg; 2014		
	<u>Trends in Data Science (elective)* (E) (WP)* /ILV / LV-Nr: WPF.10 / 4.Semester / ECTS: 3</u> Aufgrund der Veränderlichkeit der Inhalte werden hier nur beispielhaft einige Web-Quellen angeführt, die derzeit im Bereich Data Science Trends stark vertreten sind: - Medium (2020): Towards Data Science (Ed. 1), Online, https://towardsdatascience.com/ . - KDNuggets (2020): Knowledge Discovery Nuggets (Ed. 1), Online, https://www.kdnuggets.com/ .		
	<u>Trends in Smart Products(elective)* (E) (WP)* /ILV / LV-Nr: WPF.11 / 4.Semester / ECTS: 3</u> Huber W.; Industrie 4.0 kompakt – Wie Technologien unsere Wirtschaft und unsere Unternehmen verändern: Transformation und Veränderung des gesamten Unternehmens; Wiesbaden; 2018 Iyer B., Venkatraman V.; "What comes after smart products?", Harvard Business Review; 2015 Roth A.; Einführung und Umsetzung von Industrie 4.0: Grundlagen, Vorgehensmodell und Use Cases aus der Praxis; Wiesbaden; 2016		
	<u>Trends in AI Engineering (elective) (E) (WP)* /ILV / LV-Nr: WPF.12 / 4.Semester / ECTS: 3</u> None		
	<u>Application-oriented analysis platforms (elective)* (E) (WP)* /ILV / LV-Nr: WPF.2 / 3.Semester / ECTS: 4</u> PRIMÄRLITERATUR: - Mishra, A. (2019): Machine Learning in the AWS Cloud: Add Intelligence to Applications with Amazon SageMaker and Amazon Rekognition (Ed. 1), Wiley, Chichester (ISBN: 978-1119556718) - Klinkenberg, R., Hofmann, M. (2016): RapidMiner (Ed. 1), Chapman and Hall, Farnham (ISBN: 978-1482205503) SEKUNDÄRLITERATUR: - Lakshmanan, V. (2017): Data Science on the Google Cloud Platform: Implementing End-to-End Real-Time Data Pipelines: From Ingest to Machine Learning (Ed. 1), O'Reilly Media, Farnham (ISBN: 978-1491974537)		
	<u>Internet of Things (elective)* (E) (WP)* /ILV / LV-Nr: WPF.3 / 3.Semester / ECTS: 4</u> Perry L.; Internet of Things for Architects: Architecting IoT solutions by implementing sensors, communication infrastructure, edge computing, analytics, and security; Birmingham; 2018 Sinclair B.; IoT Inc: How Your Company Can Use the Internet of Things to Win in the Outcome Economy; 2017 Thomas O., Nüttgens M., Fellmann M. (Herausgeber); Smart Service Engineering: Konzepte und Anwendungsszenarien für die digitale Transformation; Wiesbaden; 2017		
	<u>Operational & Strategic Management of Applications (WP)* /ILV / LV-Nr: WPF.4 / 3.Semester / ECTS: 4</u> - Thomas Söbbing, Axel Funk, Wolfgang Fritzemeyer, Holger Heinbuch, Sandra Neuhaus, Robert Niedermeier, Joachim Schrey: Handbuch IT-Outsourcing: Recht, Strategie, Prozesse, IT, Steuern samt Business Process Outsourcing (Recht in der Praxis), C.F. Müller, 3.Auflage, 2006. - Ernst Tiemeyer: Handbuch IT-Management. Konzepte, Methoden, Lösungen und Arbeitshilfen für die Praxis. Hanser Fachbuch; 2009. - Wolfgang Johannsen, Matthias Goeken: Referenzmodelle für IT-Governance. Strategische Effektivität und Effizienz mit COBIT, ITIL & Co, Dpunkt Verlag, 2007. - Olaf Resch: Einführung in das IT-Management: Grundlagen, Umsetzung, Best Practice, Erich Schmidt Verlag, 2009.		
	<u>Process Automation (WP)* (E) /ILV / LV-Nr: WPF.5 / 3.Semester / ECTS: 4</u>		

	* Reicher M., Weber B.: Enabling Flexibility in Process-aware Information Systems, Springer 2012, Kapitel 2-4 * Quarre, F.: Robotic Process Automation, O'Reilly, 2019 * Critchley, S.; Dynamics 365 CE Essentials: Administering and Configuring Solutions, Apress; 2018 * Yapa, S.; Customizing Dynamics 365: Implementing and Releasing Business Solutions, Apress; 2019 * Salatino, M., Aliverti, E.: jBPM 6 Developer Guide; Packt Publishing, 2014 * Allweyer, Thomas: BPMN 2.0 - Business Process Model and Notation: Einführung in den Standard für die Geschäftsprozessmodellierung.- Books on Demand, 2015
	<u>Data Visualization & Visual Analytics (elective)* (E) (WP)* /ILV / LV-Nr: WPF.6 / 3.Semester / ECTS: 4</u> PRIMÄRLITERATUR: - Chang, W. (2013): R Graphics Cookbook: Practical Recipes for Visualizing Data (Ed. 1), O'Reilly, Farnham (ISBN: 978-1449316952) - Chen, C.; Härdle, W. K.; Unwin, A. (2008): Handbook of Data Visualization (Ed. 1), Springer, Berlin (ISBN: 978-3-662-50074-3) SEKUNDÄRLITERATUR:

Literature recommendation	- Dale, K. (2016): Data Visualization with Python and Javascript: Scrape, Clean, Explore & Transform Your Data (Ed. 1), O'Reilly, Farnham (ISBN: 978-1491920510) - Murray, S. (2017): Interactive Data Visualization for the Web: An Introduction to Designing with D3 (Ed. 2), O'Reilly, Farnham (ISBN: 978-1491921289)
	<u>Digital Twin & Simulation (E) (WP)* /ILV / LV-Nr: WPF.7 / 3.Semester / ECTS: 4</u> * Nath, S. V. (2021). Building Industrial Digital Twins: Design, Develop, and Deploy Digital Twin Solutions for Real-World Industries Using Azure Digital Twins. * Zhang, Y. (2024). Digital Twin Architectures, Networks, and Applications (1st ed. 2024). * Blaschke, F. (2024). Implementation and Benefits of Digital Twin on Decision Making and Data Quality Management. (1st ed.). Digital Twin Technology. (2023). IntechOpen. * Tao, F., Zhang, M., & Nee, A. Y. C. (2019). Digital twin driven smart manufacturing.
	<u>Human AI Interaction (WP)* (E) /ILV / LV-Nr: WPF.8 / 3.Semester / ECTS: 4</u> - Norman, D. (2013): The Design of Everyday Things - Rogers, Y., Sharp, H. (2023): Interaction Design: Beyond Human-Computer Interaction - Shneiderman, B. (2013): Designing the User Interface - Kempka, D., Nudelman, G. (2025): UX for AI - Shneiderman, B. (2022): Human-Centered AI - Rahwan, I. (2018): Society-in-the-loop: programming the algorithmic social contract
	<u>Trends in ERP (WP)* (E) /ILV / LV-Nr: WPF.9 / 4.Semester / ECTS: 3</u> not applicable
Acquisition of skills	<u>Quantitative Process & Quality Management (Six Sigma) (E) (WP)* /ILV / LV-Nr: WPF.1 / 3.Semester / ECTS: 4</u> The graduate, the student: * Knows the basics of descriptive and conclusive statistics * Knows how to examine measurement setups for repeatability and reproducibility * Can calculate sample sizes * Can control the stability of process results using statistical control methods * Can evaluate the ability of processes to meet customer requirements * Knows methods to search for the causes of result deviations using test procedures * Knows the basic functions of the Minitab statistics software * Can use Minitab in process analysis
	<u>Trends in Data Science (elective)* (E) (WP)* /ILV / LV-Nr: WPF.10 / 4.Semester / ECTS: 3</u> The following learning outcomes are developed in the course: - Students are familiar with current thematic trends in the field of data science. - Students are familiar with current technological developments in the field of data science. - Students are familiar with current practical issues in the field of data science.
	<u>Trends in Smart Products(elective)* (E) (WP)* /ILV / LV-Nr: WPF.11 / 4.Semester / ECTS: 3</u> The graduate / the student: * Is familiar with concepts of smart applications such as Smart House, Smart City, Smart Production, Connected Vehicles etc. * Knows the latest trends in the field of these applications
	<u>Trends in AI Engineering (elective) (E) (WP)* /ILV / LV-Nr: WPF.12 / 4.Semester / ECTS: 3</u> The participants: -are able to identify current thematic trends in the field of AI engineering, modern software development, and application -are able to identify current technological developments in the field of AI engineering, modern software development, and applications • are able to identify current practical issues in the field of AI engineering, modern software development, and applications
	<u>Application-oriented analysis platforms (elective)* (E) (WP)* /ILV / LV-Nr: WPF.2 / 3.Semester / ECTS: 4</u> The following learning outcomes are developed in the course: - Students are familiar with a range of application-oriented analysis platforms (e.g. KNIME, RapidMiner, Grafana). - Students can compare the analysis platforms they have learned with regard to their suitability for a specific application. - Students have gained first application experience with the platforms presented.
	<u>Internet of Things (elective)* (E) (WP)* /ILV / LV-Nr: WPF.3 / 3.Semester / ECTS: 4</u>

	The graduate, the student: * Knows basic IOT architectures * Knows methods of data generation * Knows basics of data transmission * Knows options of data storage * Knows forms of data visualization * Understands challenges of data security
	<u>Operational & Strategic Management of Applications (WP)* /ILV / LV-Nr: WPF.4 / 3.Semester / ECTS: 4</u> The participants: • are able to describe the operational design and control options within an IT organisation • are able to describe details of IT management areas such as personnel planning, quality management, portfolio management, IT strategy management, IT governance, and compliance concepts

Acquisition of skills	<u>Process Automation (WP)* (E) /ILV / LV-Nr: WPF.5 / 3.Semester / ECTS: 4</u> The graduate, the student: * Knows challenges in process automation * Can select processes for automation * Knows procedures and factors for successful process automation * Can create process automation in selected software * Knows interfaces to ERP and CRM systems * Knows procedures for interprocess communication and can implement them * Knows the basic structure of cloud computing-based IT applications for process automation in the operational environment using Microsoft Dynamics 365 as an example * Knows basic and advanced functionalities of process automation under Microsoft Dynamics 365 * Can implement browser and app-based UIs for process automation using Microsoft technologies as an example
	<u>Data Visualization & Visual Analytics (elective)* (E) (WP)* /ILV / LV-Nr: WPF.6 / 3.Semester / ECTS: 4</u> The following learning outcomes are developed in the course: - Students will have basic knowledge of data visualization and visual communication. - Students can develop visualizations independently and use them for communication purposes. - Students can work with different presentation tools and presentation libraries to present data and analysis results in a meaningful way.
	<u>Digital Twin & Simulation (E) (WP)* /ILV / LV-Nr: WPF.7 / 3.Semester / ECTS: 4</u> The participants: The participants: * Understand the basics of modeling and can apply these * Know typical applications and advantages of simulations * Know simulation areas and simulation software for smart products and solutions * Can create models and simulation processes * Can interpret simulation results * Can define a smart communicating product * Are familiar with the concepts of digital twin, condition monitoring, predictive maintenance
	<u>Human AI Interaction (WP)* (E) /ILV / LV-Nr: WPF.8 / 3.Semester / ECTS: 4</u> The participants: • are able to explain the basic principles of human–AI interaction and can apply these to modern AI systems such as LLMs, chatbots, agents, and decision-making systems • are able to analyse user needs, tasks, and usage contexts when interacting with AI • are able to develop interaction models and UX patterns for AI systems • are able to analyse the distribution of roles between humans and machines and can design various application scenarios
	<u>Trends in ERP (WP)* (E) /ILV / LV-Nr: WPF.9 / 4.Semester / ECTS: 3</u> Graduates/students: * Know current trends in the field of ERP systems
Course contents	<u>Quantitative Process & Quality Management (Six Sigma) (E) (WP)* /ILV / LV-Nr: WPF.1 / 3.Semester / ECTS: 4</u> * Basics of Descriptive Statistics * Measurement System Analysis * Sampling * Statistical Process Control * Process Control Charts * Process Capability Analysis * Components of Variants Analysis (COV) * Repetition Basics of Concluding Statistics * Failure Cause Determination via Hypothesis Testing (T-test, Chi-Sq, ANOVA) * Multiple Regression Analysis
	<u>Trends in Data Science (elective)* (E) (WP)* /ILV / LV-Nr: WPF.10 / 4.Semester / ECTS: 3</u> The contents of this course are not set, but will be adapted to the current prevailing trends. Content examples may include: - New technologies in the field of Big Data Processing - Trends in programming languages in data analysis - New concepts of data processing (e.g. Data Lake) - New questions in the field of data science research - New questions in data science practice
	<u>Trends in Smart Products(elective)* (E) (WP)* /ILV / LV-Nr: WPF.11 / 4.Semester / ECTS: 3</u>

	* Current best practice approaches and concepts in application areas (e.g. Smart Home, Smart City, Smart Production, Connected Vehicles, etc.) * Current best practice approaches with regard to development processes and tools * Current research and development activities or research and development results
	<u>Trends in AI Engineering (elective) (E) (WP)* /ILV / LV-Nr: WPF.12 / 4.Semester / ECTS: 3</u> - New technologies in the field of AI Engineering - Trends in the field of programming languages for AI - New design concepts in the field of AI - New questions in the field of research in AI - New questions in the field of AI practice

Course contents	<u>Application-oriented analysis platforms (elective)* (E) (WP)* /ILV / LV-Nr: WPF.2 / 3.Semester / ECTS: 4</u> The following content is discussed in the course: - Presentation of different user-oriented analysis platforms (e.g. KNIME, RapidMiner, Grafana) - Presentation of different cloud solutions for data analysis (e.g. Google Cloud, AWS, Azure) - Application of the platforms presented using the example of analysis data sets - Discussion of the different approaches
	<u>Internet of Things (elective)* (E) (WP)* /ILV / LV-Nr: WPF.3 / 3.Semester / ECTS: 4</u> Introduction * IoT architecture (e.g. reference models) * Requirements for IOT systems * IOT data transmission protocols * Use of IOT in an industrial context (examples) * Basics of sensor technology * Basics of embedded systems Implementation * Procedure for implementing IOT * Prototypical implementation of IOT * Selection of sensors * Collection, visualization and evaluation of data * Implementation challenges
	<u>Operational & Strategic Management of Applications (WP)* /ILV / LV-Nr: WPF.4 / 3.Semester / ECTS: 4</u> - personnel deployment planning and resource management - contract management and finance management (cost and activity accounting) - quality management and quality assurance (reviews, audits, etc.) - staff information and communication; IT strategy and IT portfolio management; - risk management; IT governance and compliance - ITIL, CoBIT - service level agreements and outsourcing - balanced score card methodology - IT management tools (ADOit, etc.)
	<u>Process Automation (WP)* (E) /ILV / LV-Nr: WPF.5 / 3.Semester / ECTS: 4</u> * Basic terms: Business process, workflow, BPMS, WFMS, RPA, etc. * Selection criteria for workflow engines for process automation * Architecture and integration of workflows for process automation * Overview of interprocess communication * Transactional properties of processes, simulation and code generation * Basics of Microsoft Dynamics 365: Modules and navigation, basic entities and standard workflows * Organizational and technical implementation with configuration and declarative programming
	<u>Data Visualization & Visual Analytics (elective)* (E) (WP)* /ILV / LV-Nr: WPF.6 / 3.Semester / ECTS: 4</u> The following content is discussed in the course: - Evaluation tools with visual orientation, e.g. BI tools such as MS PowerBI, Tableau, QlikView - Display libraries, e.g. matplotlib.pyplot, ggplot2 - Rules of visual communication, e.g. Hichert SUCCESSSS
	<u>Digital Twin & Simulation (E) (WP)* /ILV / LV-Nr: WPF.7 / 3.Semester / ECTS: 4</u> Basics and modeling: * Introduction to digital twins, their importance and areas of application * Communication of the theoretical principles and methods of modeling Simulation and software: * Overview of simulation techniques and their typical applications * Getting to know various simulation software and practical exercises Smart products and solutions: * Creating and analyzing models for smart, communicating products * Integration of digital twins into IoT systems and their advantages In-depth concepts and applications: * Introduction to advanced topics such as condition monitoring and predictive maintenance * Discussion about the role of digital twins in future technology development. Practical project: * Planning and implementing your own digital twin project to apply what you have learned
	<u>Human AI Interaction (WP)* (E) /ILV / LV-Nr: WPF.8 / 3.Semester / ECTS: 4</u>

- | | |
|--|---|
| | <ul style="list-style-type: none">- Fundamentals of Human–AI Interaction<ul style="list-style-type: none">- Human cognition, mental models, decision-making behavior- HCI principles for AI systems- UX Design for AI<ul style="list-style-type: none">- Interaction patterns (conversational UI, agents, multimodal interfaces)- Prompt design, system messages, feedback loops- Trust and user acceptance- Human-in-the-Loop & Human-on-the-Loop |
|--|---|

Course contents	- Alignment of human-machine roles - Task distribution, limits of automation - Error prevention & recovery design - Empathetic & Social Aspects of AI Interaction - Social responses, trust - Persuasive and adaptive systems Methods & Tools - Usability testing for AI systems - Prototyping tools - Evaluation methods (task success, trust metrics, cognitive load)
	<u>Trends in ERP (WP)* (E) /ILV / LV-Nr: WPF.9 / 4.Semester / ECTS: 3</u> * Current developments in the area of business application systems with special emphasis on ERP-systems. Models, examples, best practice cases
Teaching and learning methods	<u>Quantitative Process & Quality Management (Six Sigma) (E) (WP)* /ILV / LV-Nr: WPF.1 / 3.Semester / ECTS: 4</u> Lecture, individual work with software, group work, presentation and discussion of tasks
	<u>Trends in Data Science (elective)* (E) (WP)* /ILV / LV-Nr: WPF.10 / 4.Semester / ECTS: 3</u> The following methods are used: - Lecture with discussion - Interactive workshop
	<u>Trends in Smart Products(elective)* (E) (WP)* /ILV / LV-Nr: WPF.11 / 4.Semester / ECTS: 3</u> Lecture, discussion, exercise
	<u>Trends in AI Engineering (elective) (E) (WP)* /ILV / LV-Nr: WPF.12 / 4.Semester / ECTS: 3</u> The following methods are used: - Lecture with discussion - Interactive workshop
	<u>Application-oriented analysis platforms (elective)* (E) (WP)* /ILV / LV-Nr: WPF.2 / 3.Semester / ECTS: 4</u> The following methods are used: - Lecture with discussion - Processing of exercises - Interactive workshop
	<u>Internet of Things (elective)* (E) (WP)* /ILV / LV-Nr: WPF.3 / 3.Semester / ECTS: 4</u> Lecture, individual work with software, group work, presentation and discussion of tasks
	<u>Operational & Strategic Management of Applications (WP)* /ILV / LV-Nr: WPF.4 / 3.Semester / ECTS: 4</u> Lecture, group work, presentation and discussion of tasks
	<u>Process Automation (WP)* (E) /ILV / LV-Nr: WPF.5 / 3.Semester / ECTS: 4</u> Lecture, individual work with software, group work, presentation and discussion of tasks
	<u>Data Visualization & Visual Analytics (elective)* (E) (WP)* /ILV / LV-Nr: WPF.6 / 3.Semester / ECTS: 4</u> The following methods are used: - Lecture with discussion - Interactive workshop - Case studies
	<u>Digital Twin & Simulation (E) (WP)* /ILV / LV-Nr: WPF.7 / 3.Semester / ECTS: 4</u> Lecture, Group Work, Discussion
	<u>Human AI Interaction (WP)* (E) /ILV / LV-Nr: WPF.8 / 3.Semester / ECTS: 4</u> Lecture, group work (project), presentation and discussion of tasks
	<u>Trends in ERP (WP)* (E) /ILV / LV-Nr: WPF.9 / 4.Semester / ECTS: 3</u> Lecture, group work, presentation and task discussion
Evaluation Methods Criteria	<u>Quantitative Process & Quality Management (Six Sigma) (E) (WP)* /ILV / LV-Nr: WPF.1 / 3.Semester / ECTS: 4</u> Written exam
	<u>Trends in Data Science (elective)* (E) (WP)* /ILV / LV-Nr: WPF.10 / 4.Semester / ECTS: 3</u>

	Seminar thesis
	<u>Trends in Smart Products(elective)* (E) (WP)* /ILV / LV-Nr: WPF.11 / 4.Semester / ECTS: 3</u>
	Seminar thesis

Evaluation Methods Criteria	<u>Trends in AI Engineering (elective) (E) (WP)* /ILV / LV-Nr: WPF.12 / 4.Semester / ECTS: 3</u> Seminar thesis
	<u>Application-oriented analysis platforms (elective)* (E) (WP)* /ILV / LV-Nr: WPF.2 / 3.Semester / ECTS: 4</u> Seminar thesis
	<u>Internet of Things (elective)* (E) (WP)* /ILV / LV-Nr: WPF.3 / 3.Semester / ECTS: 4</u> Written exam
	<u>Operational & Strategic Management of Applications (WP)* /ILV / LV-Nr: WPF.4 / 3.Semester / ECTS: 4</u> Seminar thesis
	<u>Process Automation (WP)* (E) /ILV / LV-Nr: WPF.5 / 3.Semester / ECTS: 4</u> Written exam
	<u>Data Visualization & Visual Analytics (elective)* (E) (WP)* /ILV / LV-Nr: WPF.6 / 3.Semester / ECTS: 4</u> Seminar thesis
	<u>Digital Twin & Simulation (E) (WP)* /ILV / LV-Nr: WPF.7 / 3.Semester / ECTS: 4</u> Seminar paper
	<u>Human AI Interaction (WP)* (E) /ILV / LV-Nr: WPF.8 / 3.Semester / ECTS: 4</u> Seminar thesis
	<u>Trends in ERP (WP)* (E) /ILV / LV-Nr: WPF.9 / 4.Semester / ECTS: 3</u> Seminar thesis

Module number:	Thesis	Scope:	
MAS		26	ECTS
Degree program	University of Applied Sciences Master's Program ERP-Systems & Business Process Management part-time		
Position in the curriculum	3. Semester		
	4. Semester		
Level	3. Semester: Master`s course / 4. Semester: Master		
Previous knowledge	3. Semester: not applicable / 4. Semester: not applicable		
Blocked	no		
Participant group	Bachelor graduates, beginners		
Literature recommendation	<u>Academic Methods /SE / LV-Nr: MAS.1 / 3.Semester / ECTS: 2</u> * Atteslander, P.; Methoden der empirischen Sozialforschung (13. A.). Berlin: Erich Schmidt Verlag; 2010 * Bänsch, A.; Wissenschaftliches Arbeiten (11. A.). Berlin: De Gruyter Oldenbourg; 2013 * Mayring, P.; Die Praxis der Qualitativen Inhaltsanalyse (2. A.). Weinheim, Basel: Beltz Verlag; 2008 * Theisen, M. R.; Wissenschaftliches Arbeiten: Technik - Methodik - Form (15. A.). München: Vahlen; 2011		
	<u>Colloquium for the Master thesis /SE / LV-Nr: MAS.2 / 4.Semester / ECTS: 2</u> * Atteslander, P.; Methoden der empirischen Sozialforschung (13. A.). Berlin: Erich Schmidt Verlag; 2010 * Bänsch, A.; Wissenschaftliches Arbeiten (11. A.). Berlin: De Gruyter Oldenbourg; 2013 * Mayring, P.; Die Praxis der Qualitativen Inhaltsanalyse (2. A.). Weinheim, Basel: Beltz Verlag; 2008 * Theisen, M. R.; Wissenschaftliches Arbeiten: Technik - Methodik - Form (15. A.). München: Vahlen; 2011		
	<u>Master Thesis /UE / LV-Nr: MAS.3 / 4.Semester / ECTS: 22</u> * Atteslander, P.; Methoden der empirischen Sozialforschung (13. A.). Berlin: Erich Schmidt Verlag; 2010 * Bänsch, A.; Wissenschaftliches Arbeiten (11. A.). Berlin: De Gruyter Oldenbourg; 2013 * Mayring, P.; Die Praxis der Qualitativen Inhaltsanalyse (2. A.). Weinheim, Basel: Beltz Verlag; 2008 * Theisen, M. R.; Wissenschaftliches Arbeiten: Technik - Methodik - Form (15. A.). München: Vahlen; 2011		
Acquisition of skills	<u>Academic Methods /SE / LV-Nr: MAS.1 / 3.Semester / ECTS: 2</u> Graduates/students: * Know scientific methods * Can formulate research questions and prepare a disposal to a specialist topic * Can elaborate a specialist topic with scientific methods * Can independently research for literature		
	<u>Colloquium for the Master thesis /SE / LV-Nr: MAS.2 / 4.Semester / ECTS: 2</u> The graduate, the student: * Knows how to conduct scientific reviews * Knows how to present results to a scientific community * Can critically review scientific findings		
	<u>Master Thesis /UE / LV-Nr: MAS.3 / 4.Semester / ECTS: 22</u> The graduate / the student: * Can independently write a scientific paper on a specialist topic in the field of process management or ERP systems		
Course contents	<u>Academic Methods /SE / LV-Nr: MAS.1 / 3.Semester / ECTS: 2</u> The graduate, the student: * Knows scientific methods * Can formulate research questions and create a disposition to a subject * Can work on a subject with scientific methods * Can research literature independently		
	<u>Colloquium for the Master thesis /SE / LV-Nr: MAS.2 / 4.Semester / ECTS: 2</u> * Accompanying the students during the preparation of the Master thesis. * In the colloquium, the question/hypothesis and structure of the Master thesis are presented and discussed. * In addition, the scientific methodology of the Master thesis is discussed and questioned and advice is given on the formal design of the Master thesis.		
	<u>Master Thesis /UE / LV-Nr: MAS.3 / 4.Semester / ECTS: 22</u> Independently study and work out a specialist topic from the field of economics and information technology using scientific methods.		

Teaching and learning methods	<u>Academic Methods /SE / LV-Nr: MAS.1 / 3.Semester / ECTS: 2</u> Lecture, individual work, presentation and discussion of tasks
	<u>Colloquium for the Master thesis /SE / LV-Nr: MAS.2 / 4.Semester / ECTS: 2</u> Lecture, presentation and task discussion
	<u>Master Thesis /UE / LV-Nr: MAS.3 / 4.Semester / ECTS: 22</u> Student research project
Evaluation Methods Criteria	<u>Academic Methods /SE / LV-Nr: MAS.1 / 3.Semester / ECTS: 2</u> Seminar thesis

Evaluation Methods Criteria	<u>Colloquium for the Master thesis /SE / LV-Nr: MAS.2 / 4.Semester / ECTS: 2</u>
	Presentation
	<u>Master Thesis /UE / LV-Nr: MAS.3 / 4.Semester / ECTS: 22</u>
	Master thesis

3 ADMISSION REQUIREMENTS

The general admission requirements are governed by § 4 FHG as amended; accordingly, the subject-specific admission requirement for a master's program at a university of applied sciences is a completed, relevant bachelor's degree from a university of applied sciences or the completion of an equivalent program comprising at least 180 ECTS credits at a recognized domestic or foreign postsecondary educational institution.

1. For the purposes of this application, bachelor's degree programs or equivalent postsecondary educational qualifications in the fields of social sciences and economics (based on ISCED 2013, Fields of Education and Training 03/04) are considered relevant if they cover the core subject areas of marketing, communication, management, and business administration (based on ISCED 2013, Fields of Education and Training 031/032/041), covering a total of at least 30 ECTS credits.
2. In its program architecture, Kufstein University of Applied Sciences in Tyrol provides for the integration of bachelor's and master's programs in accordance with the Bologna Process: Upon successful completion of a bachelor's degree, graduates have several options for pursuing a master's degree both at and outside of Kufstein University of Applied Sciences in Tyrol. For this Master's program, graduates of the following degree programs at Kufstein University of Applied Sciences in Tyrol (regardless of the program's organizational structure) would be eligible for admission based on the aforementioned academic background:
 - Energy & Sustainability Management
 - Facility Management & Real Estate Management
 - International Business Management
 - Leadership & Business Management
 - Coding & Digital Design
 - Drone Engineering
 - Industrial Engineering
 - Sports, Culture, & Event Management
 - Marketing & Communication Management
 - Business Psychology & Management
3. The languages of instruction and examination at Kufstein University of Applied Sciences in Tyrol are German and English across all degree programs. Therefore, students from non-German-speaking countries must provide proof of proficiency in German.
4. For English-language master's programs, proof of English proficiency must be provided.
5. Verification of compliance with the admission requirements is the responsibility of the program director of the Master's program in ERP Systems & Business Process Management.

