#	What is expected Additional remark	Type Select a service type Choose form: Training, Consulting, Coaching	Event Titel/ Service Titel Name of the service	Short Description Please provide a short description of each service you plan to offer in the "Training and Skill development" WP Required elements of the description: * Short description (1-3 Paragraphs) with:	Duration How long does the service take? only duration of service execution (/ in days (between 0,5	Groupsize Please provide an indication of the optimal size of the audience Choose form: individual, small (2-7), medium (8-15), large (16>50)	Qualification level of participants Please provide the expected proficiency level of the participants of the described service! Choose from: * beginner
Number	Partner	Type	Event Titel/ Service Titel	Short Description	Duration	Groupsize	Qualification level of participants
1	AIT/DSS	Training	SNSA System and Network Security Advanced	This course introduces system security concepts & principles, exploitation basics, cryptography, malware, access & authorization control, security policies & configuration management, system hardening, firewalls & AV software, rootkits, mitigation technologies (DEP, SEHOP, ASLR, EAF, ...), PKI's & certificate pinning, sandboxing technologies, application whitelisting, surveillance & log management, encryption, virtualization/containerization and system audit, basic concepts in computer networking (protocols, etc.), threats (e.g., DDoS attacks, Botnets, etc.), secure protocols (BGPsec, SSH, ...), and approaches to intrusion detection using open-source tools (OSSIM, Snort, Suricata, ...). Hands on Exercises: The attendees will setup and configure various system security software tools and perform system hardening in Windows and Linux environments as well as setup and configure SNORT & pfBLOCKER for network intrusion detection and IP blacklisting and use various advanced methods and tools for computer security such as network scanners, port scanners and learn how to identify network traffic related to these tools. Prerequisites	1	medium (8-15)	Intermediate
2	AIT/DSS	Training	IoT Internet of Things Security	Introduction to IoT, domains, use cases and previous incidents, characteristics of IoT systems, IoT standards and reference models (ISO 30141, RAMI 4.0, IIRA, IoT-A, ...), IoT-specific risks and security concepts, framework & platform security features, privacy and security principles, hardware based security controls (MCU, TPM, MPUs, PUFs, Crypto, Tamper Protection, ...), protection of API's and update functionality, access control within the IoT ecosystem, secure key management, monitoring concepts, audit & guidelines. Hands on Exercises: Vulnerability assessment (using tools such as Nessus and its ICS extensions), re-arrange the architecture of the system to mitigate potential threats, configuring intrusion detection systems and firewall rules that reduce the exposure.	2	medium (8-15)	Intermediate
3	AIT/DSS	Training	SIEM Security Incident and Event Management	Introduction to SIEM systems, use cases, prerequisites & objectives, privacy & data reconstruction, IT audit policy & compliance monitoring, security incidents & indicators of compromise (IoCs), False-Positive & Warning, Threat Hunting. Hands on Exercises: The attendees will learn how to setup, configuring and utilizing system and network monitoring solutions and SIEMs to identify events, anomalous events as well as security incidents.	2	medium (8-15)	Expert
4	AIT/DSS	Training	GRC Governance, Risk & Compliance		1	medium (8-15)	Beginner
5	AIT/DSS	Training	ICS Industrial Control Systems Security Intermediate	The course introduces ICS and the major differences to classical IT environments; introduces the major challenges to secure ICS environments; indicates the nature of threats with examples; discusses security architecture for ICS (e.g., based on standards such as IEC 62443); introduce ICS-specific challenges associated with detecting attacks; as an advanced module, could give an introduction to penetration testing for ICS environments. Hands on Exercises: Vulnerability assessment (using tools such as openVAS and its ICS extensions), re-arrange the architecture of the system to mitigate potential threats, configuring intrusion detection systems and firewall rules that reduce the exposure.	1	medium (8-15)	Intermediate
6	AIT/DSS	Training	ARA Advanced Risk Assessment	Methods and tools based on ISO 27005 & ISO 31001, sensitivity analysis, artificial neural networks, bayes' probability networks, expert systems, fuzzy logic, graph analysis, petri-nets, system dynamics, risk aggregation & decision support systems, sensor & metric systems Hands on Exercises: Attendees will have the opportunity to model practical examples of risk analysis in available tools and perform various exercises with example implementations of advanced risk models. Prerequisites: Trainers shall already have passed the Governance, Risk & Compliance course	1	medium (8-15)	Intermediate
7	AIT/DSS	Training	CTH Cybersecurity Threat Hunting	Methods and tools based on ISO 27005 & ISO 31001, sensitivity analysis, artificial neural networks, bayes' probability networks, expert systems, fuzzy logic, graph analysis, petri-nets, system dynamics, risk aggregation & decision support systems, sensor & metric systems Hands on Exercises: Attendees will have the opportunity to model practical examples of risk analysis in available tools and perform various exercises with example implementations of advanced risk models. Prerequisites: Trainers shall already have passed the Governance, Risk & Compliance course	1	medium (8-15)	Expert
8	AIT/DSS	Training	EXEC Security Essentials for Executive leaders & awareness for IT Managers (Short)	Methods and tools based on ISO 27005 & ISO 31001, sensitivity analysis, artificial neural networks, bayes' probability networks, expert systems, fuzzy logic, graph analysis, petri-nets, system dynamics, risk aggregation & decision support systems, sensor & metric systems Hands on Exercises: Attendees will have the opportunity to model practical examples of risk analysis in available tools and perform various exercises with example implementations of advanced risk models. Prerequisites: Trainers shall already have passed the Governance, Risk & Compliance course	1	medium (8-15)	Beginner
9	AIT/DSS	Training	EXEC Security Essentials for Executive leaders & awareness for IT Managers (Long)	Methods and tools based on ISO 27005 & ISO 31001, sensitivity analysis, artificial neural networks, bayes' probability networks, expert systems, fuzzy logic, graph analysis, petri-nets, system dynamics, risk aggregation & decision support systems, sensor & metric systems Hands on Exercises: Attendees will have the opportunity to model practical examples of risk analysis in available tools and perform various exercises with example implementations of advanced risk models. Prerequisites: Trainers shall already have passed the Governance, Risk & Compliance course	2	medium (8-15)	Beginner
10	AIT/DSS	Workshop	Individual development of threat scenarios (short)	TBD	0,5	medium (8-15)	Beginner
11	AIT/DSS	Workshop	Individual development of threat scenarios (long)	TBD	1	medium (8-15)	Beginner
12	AIT/DSS	Workshop	Production Dataspaces and its link to Gaia-x	TBD	1	medium (8-15)	Beginner
13	AIT-TE	Training	Human-Centeredness for Future Production Environments: Awareness, Principles and Pitfalls	In this half day training, we first introduce the participants to Industry 5.0 and digital assistance systems in the industry and encourage them to become aware of the “Human in the Loop”. Then, we look at use cases from the areas of industrial human-machine interfaces and future human-machine interaction. We also reflect on important principles and pitfalls. The goal is having the participants leave the 4-hour-session with ideas regarding future production environments in their own companies.	0,5	medium (8-15)	Beginner
14	AIT-TE	Workshop	Human-Centered Practices: Identification of Needs, Maturity and Future Strategies	In this half day workshop, we investigate current needs of production companies regarding human-centered digitalization with creative methods from user-centered design and design thinking. Depending on the participants’ backgrounds and the emerging needs, we support each participant or group to assess the digital maturity of their companies and think about first ideas on future strategies. The goal is having the participants sketch out rough roadmaps to human-centered production environments with emerging technologies in their companies.	0,5	medium (8-15)	Beginner
15	AIT-TE	Training	Uncover the Needs: Requirements Analysis and Contextual Conditions	In this training we invite participants to take the users perspective within the production process. Methods are taught to analyze the work context and processes from the user's point of view. The awareness for user’s needs, problems and risks are the base for optimization potentials and innovation. The aim of the training is to understand the interaction between human factors and technology to integrate future innovations more easily and sustainably into the working environment of the employees.	1	medium (8-15)	Intermediate
16	AIT-TE	Training	Industrial Human-Machine Interfaces: Experience Design and Prototyping	In the industrial environment, prototyping often focuses on the technical feasibility of solutions. In this training, we will experience the benefits of user experience prototyping and how, together with other user-centered design process tools, interaction solutions can be designed for a productive and successful working day for our users. We will take a look which UX tools are to be integrated into the development process and how this approach increases productivity in product development and favors the development of innovative user interface concepts	1	medium (8-15)	Intermediate
17	AIT-TE	Training	Future Human-Machine Interaction: From Multimoadality to Extended Reality	In this half day training, participants will explore the realm of Future Human-Machine Interaction using Extended Reality (XR) technology. Through the sessions, participants will gain an understanding of digital twins, the leverage-factors of XR-prototyping, and immersive testing for innovative user interfaces. The training will also deal with the topic of a multisensory experience within a safe and controllable digital environment, showcasing the potential of XR in the creation of a hybrid world and innovative concepts within the industry 5.0. By the end of the session, participants will leave with a deeper understanding of XR and its potential to revolutionize future machine interaction in the physical and digital realms.	1	medium (8-15)	Expert

18	AIT-TE	Workshop	I 5.0 Experience and HMI Camp	Different users with different tasks and needs often operate the same machines in the production environment in order to be productive together. A targeted, individual user experience that focuses not only on efficiency but also on the motivation of the user is often in short supply. In this one-day workshop we will experience how valuable and productive it can be to look at workflows and interaction goals of users from different stakeholder perspectives. Building on a shared picture, experience goals and innovative approaches for the next generation HMI can be defined much more clearly in order to drive innovation and development forward in a goal-oriented manner.	1	medium (8-15)	Expert
19	Ars Electronica	Workshop	Future Insights: Artificial Intelligence	In-Person Workshop "Future Insights: Artificial Intelligence": Based on the current exhibition "Understanding AI" in the Ars Electronica Center, the program provides insights into the essential aspects of Artificial Intelligence. Furthermore, participants will learn examples of current practical applications in various fields. In addition, participants will discuss Artificial Intelligence from a "human perspective" regarding its impacts on our society and economy.	1	medium (8-15)	Beginner
~~20~~	~~Ars Electronica~~	~~Workshop~~	~~Future Insights: Blockchain~~	~~Online Workshop "Future Insights: Blockchain":~~ ~~Participants will gain an essential understanding of Blockchain and current use cases in various fields. In addition, participants will discuss Blockchain from a "human perspective" regarding its impacts on our society and economy.~~	0,5	medium (8-15)	Beginner
21	CDP	Training	Manufacturing Process Optimization using Discrete-Event Simulation	The training provides an introduction to Discrete-Event Simulation (DES) and how it can be utilized to optimize production facilities and logistics processes. After a short theoretical introduction, the participants are able to gather hands-on experience using the DES simulation tool FlexSim. After the training, participants have gained an insight in the basic mechanisms and optimization possibilities of DES and are able to set up a basic simulation project within FlexSim. The training is supported by presentations and example models. A temporary FlexSim license is provided to each participant. For an active participation in the course, a laptop with the minimum system requirements for FlexSim is required.	1	medium (8-15)	Intermediate
22	~~CDP~~	~~Training~~	~~Spreadsheet Programming for Manufacturing Companies – Demand Forecasting Techniques~~		~~2~~	~~medium (8-15)~~	~~Intermediate~~
23	~~CDP~~	~~Training~~	~~Spreadsheet Programming for Manufacturing Companies – Advanced Technique (Linear Programming, Data quality and Production modelling~~		~~1~~	~~medium (8-15)~~	~~Intermediate~~
24	CDP	Training	BPMN-based Manufacturing Orchestration	Diese Einführung gibt einen Überblick welche Vorteile die Einführung von Process-Based Manufacturing Orchestration hat, was die technischen Grundlagen dazu sind und wie diese möglichst reibungslos eingeführt werden kann. Dies wird anhand eines Beispiels gezeigt, die Teilnehmer können auch selbst ein Beispiel bearbeiten.	0,5	medium (8-15)	Beginner
25	EITM and Partners	Training	To be provided				
26	EITM and Partners	Training	To be provided				
27	EITM and Partners	Training	To be provided				
28	EITM and Partners	Training	To be provided				
29	EITM and Partners	Training	CAD/CAM and Simulation for NC-Code Optimization	This Online Seminar provides engineers a brief introduction into the topics of “CAD/CAM and Simulation for NC-Code Optimization”. The Content of the Seminar focuses on Simulation and Programming Systems for machining (Milling) available on the market and shows possibilities and limitations with exemplary party within the manufacturing environment.	3	medium (8-15)	Intermediate
30	EITM and Partners	Seminar	Modellierung und Simulation von additiven Prozessketten für EinsteigerInnen	Dieses Live-Seminar bietet IngenieurInnen eine erste Einführung zum Thema „Modellierung und Simulation von additiven Prozessketten für EinsteigerInnen“. Die Seminarinhalte fokussieren sich auf am Markt verfügbare Simulations- und Programmiersysteme für die Additive Fertigung und zeigen aktuelle Möglichkeiten und Limitierungen anhand von Beispielteilen in einer Laborumgebung auf.	1	medium (8-15)	Intermediate
31	EITM CLC East / ABC Research	Training	Blockchain in Industry 4.0 for Professionals - Basic	The training focuses on the technological as well as the business aspects of Blockchain in Industry 4.0 and the Internet of Things. The convergence of Blockchain with emerging technologies in those fields will be at the centre of the activities. Introduction to Blockchain, Core Technological Concepts, etc.	2	medium (8-15)	Beginner
32	EITM CLC East / ABC Research	Training	Blockchain in Industry 4.0 for Professionals - Intermediate	The training focuses on the technological as well as the business aspects of Blockchain in Industry 4.0 and the Internet of Things. The convergence of Blockchain with emerging technologies in those fields will be at the centre of the activities. Blockchain Ecosystems, Technology/Protocol Landscape, Use Cases.	2	medium (8-15)	Intermediate

33	EITM CLC East / ABC Research	Training	Blockchain in Industry 4.0 for Professionals - Advanced	The training focuses on the technological as well as the business aspects of Blockchain in Industry 4.0 and the Internet of Things. The convergence of Blockchain with emerging technologies in those fields will be at the centre of the activities. Use Case Design & Evalaution of Use Cases.	2	medium (8-15)	Intermediate
34	FILL	Training	Multilayer: Tape Laying for composite strucutres	This in-person or online training provides insights on the process of the fill tape laying machine MULTILAYER. The machine enables very fast compilation of semi-finished fiber composites, therby meeting the prerequiste for high component production rates and highest level of digital production. It enables an automated production of fiber composites. In conjunction with a consoldiation unit, the MULTILAYER can be seamlessly integrated into a forming and injection molding process. The workshops provides insights on the laying process itself, as well as the software component Fill TAPE STUDIO - how the system is programmed and how the CAD geometry is directly sent to the machine. A prototype part is produced during the training at the FILL FUTURE ZONE, the center for digitalisation, research and development. Also the mechanical build-up of the machine is further introduced, how the different spools work together as well as which matrix materials can be used.	1	very Large (>50)	Intermediate
35	FILL	Training	Weldbox: automated and robotic assisted welding	The in-person or online training on the Fill WELDBOX focuses on the automated and digitized process of assisted welding. Within the WELDBOX up to 6 robots can simultaneously weld on upt to foru fixtures. Servo rotary axes and turning units can be integrated in the welding cell, as well as all common robot types and welding sources. The welding program is prepared offline using the central FILL STUDIO operating software. During this process, the feasibility of the welding process and the reachability of the welding positions are simulated and checked, providing the highest level of digitalisation. The robot sequence created in this way is automatically generated for the respective program code of the robot controller by means of a postprocessor and can be transferred directly to the controllers via a network drive.	1	very Large (>50)	Intermediate
36	FILL	Training	Speed Composer: Joint bonding	This in-person or online training focuses on the process and engineering of the SPEED COMPOSER, which is designed for production of core layers for 3-layer boards or parquet from lamellae. These lamellae can be manufactured from sawn timber, planed material, or gluelam. Depending on requirements, the SPEED COMPOSER can apply one or two adhesives in parallel. Customary hot adhesives and PVAc white glues are used in this process. Professionals can see the innovative system in action in Fill's production environment and analyze possibilities/limitations on the basis of demo parts. The focus of the training is the machining process/components, the data collection and analysis, as well as the offline-programming behind the process.	1	very Large (>50)	Intermediate
37	FILL	Workshop	FILL Future Lab: Discover your Genius	In-preson Workshops within the Fill FUTURE LAB. The FUTURE LAB essentially consists of eight laboratories: VR LAB, DATA LAB, SMART LAB, HEALTH LAB, ROBO LAB, MOBILITY LAB, MAKING LAB, and MEDIA LAB. Each of these is a self-contained learning unit where attendees can playfully acquire tomorrow's knowledge and expertise. As different as the individual labs may be, what they all have in common are the essential skills of goal-oriented action, careful handling of equipment, capacity for teamwork, and the ability to reflect upon what is taught here. The concept of the FUTURE LAB is aimed at the widest variety of target groups. Our programs inspire children and young people from kindergartens, elementary schools, junior and senior high schools, as well as apprentices and adults. Our customers, suppliers, and partners also have the opportunity to work here on innovations and cooperations. The focus of this format is on "team building" and "competition". Cooperation in the team is very important for the groups' shared success. The digital networking of the labs and the common goal make the "we are one" spirit clearly perceptible. After an introduction phase, the attendees are divided into eight groups. Each team has approximately two hours to familiarize themselves with the technologies and to solve their individual challenges independently. They all have a common goal: to perform the "Robocup". Each team makes its individual contribution to successful performance. Finally, the results are reflected upon and parallels drawn to everyday situations and the professional world, and then the hazards of digitalization are discussed.	2	medium (8-15)	beginner
38	FILL	Training	Data Analysis: Learn from the Expert on a FILL Syncromill	CYBERNETICS ANALYZE is Fill's analysis platform for entering and storing all relevant machine parameters of a Fill SYNCROMILL machine. With the help of edge computing and modern software architecture, the required evaluations and analyses can be activated and deactivated again at any time. Via a connection to the Fill Cloud, analyses can be carried out across different machines and plants, and the algorithms can be continuously improved. The training provides best practice examples and hands-on excercises. It focuses on the acquistion, preparation and analysis of data and the infrastructure in the background.	3	small (2-7)	Intermediate
39	FILL	Training	Grind Performer: iron casting and automated fettling process of large and very large strucutres	This in-person training focuses on introducing the process and software applications behind the GRIND PERFROMER. Professionals can see the innovative system in action in Fill's production environment and analyze possibilities/limitations on the basis of demo parts. The focus of the training is the machining process/components, the data collection and analysis, as well as the offline-programming behind the process. The Fill Robot Grinding Machine GRIND PERFORMER R is a robust grinding and deburring machine adapted to the harsh foundry environment for gray cast iron parts, casting burrs etc. are fettled by means of impact wheel and grinding tools.	1	very Large (>50)	Intermediate
40	FILL	Other	Hackathon: AI applications development	Fill can offer a variety of event locations at the headquater in Gurten (FUTURE DOME, FUTURE ZONE, FUTURE LAB, HOLODECK) and has expertise in planning and carrying out a hackathon. Especially for experts on data science and AI a hackathon can be of big value to come up with new ideas and concepts. With its comprehensive machine park Fill can even offer machine data of test machines in the center for digitalisation, research and development. Challenge, Moderation, Support can be offerde by the Fill team.	3	large (16>50)	expert
41	FILL	Training	ROBOCAST V	In this in-person or online training the casting process, simulation and data acquisition behind the ROBOCAST V is adressed. The ROBOCAST V is used for low-oxide picking up, manipulation and dosing of molten aluminum. In order to achieve a constant casting quality, consistent and reproducible casting parameters are the decisive factors. With the new casting system, Fill guarantees its customers maximum casting quality while at the same time saving recycled material. With the ROBOCAST V, the mold is filled dynamically with the melt, with dispensing volumes of 0.5 to 2.5 kg/sec. Depending on the mold requirements, the delivery rate can be varied and adapted during the metering process. The dispensing process can be parameterized in such a way that the mold is always filled under the bath after casting. After casting, residual melt is handled in a protective gas atmosphere in order to avoid oxide formation in the system. The CYBERNETICS PRODUCE software tool integrated in the casting system offers an optimal solution for the seamless recording and storage of relevant process parameters that are required for efficient and reliable component tracking.	1	large (16>50)	Intermediate
42	JKU	Training	Introduction to Programming in Python	Foundations of programming concepts and paradigms, application of programming environments, syntax of python, data structures (data types, variables, operators, strings, lists, dictionaries) and control structures (case differentiation, clauses, switches and loops), standard I/O, functions and exception handling, file systems, libraries for data analysis	3	medium (8-15)	Beginner
43	JKU	Training	Light-weight Software Quality	Successful digitalization projects need robust and working software. To ensure this, systematic static analysis of Source Code is one cost effective way to assure this. You learn about best practices for light-weight software quality management using concepts like technical debt, qualiy profiles, and quality models. Benchmarking can be used to systematically compare the quality of products. The training is partially independent of specific tools, but uses SonarQube to gain some practical experience.	1	medium (8-15)	Intermediate
44	JKU	Seminar	Vaue Based Software Development	Development resources are always scarce - one approach to deal with this is to realize only those product requirements that have the most customer value (considering also cost, risk and complexity of realization). This seminar gives an overview of the role of customer and business value for selecting software or system features for products. We present approaches to prioritize requirements based on customer value. In a practical workshop setting, seminar participants can experiment with selected customer value prioritization techniques to get an understanding which of these techniques best fits their organizational context.	0,5	medium (8-15)	Intermediate
45	JKU	Seminar	Software security	Will be provided soon (Johannes Sametinger)	0,5	medium (8-15)	Intermediate
46	JKU	Training	Value Network Analysis	Will be provided soon (Christian Stary)	1	medium (8-15)	Beginner
47	JKU	Seminar	Design-Integrated Engineering incl. Digital Twins and System-of-Systems	Will be provided soon (Manuel Wimmer)	1	medium (8-15)	Intermediate
48	JKU	Workshop	Analysing and conceptualizing digital business models	Will be provided soon (Christian Stary)	2	small (2-7)	Beginner
49	JKU	Training	Digital stress: Impact of digitalization on employees	Due to recent developments in many workplaces (e.g., intensified telework and video conferencing), employees are facing new challenges and the needs for new skills and knowledge. These developments also lead to phenomena like digital stress. This training aims to clarify the main causes for and consequences of digital stress and how to deal with this issues from an organizational perspective. It also aims to increase managerial awareness for employees' other challenges brought by digitalization.	1	medium (8-15)	Intermediate

50	JKU	Training	Conceptualizing and Implementation of web projects including e-commerce	Many SMEs face the need for participating in e-commerce. This training aims to enable SMEs to do so including multiple perspectives: Multichannel strategies, operational and tactical challenges and potential solutions, specifics of digital goods and services, platform and sharing economy, changing business models and processes, customer journey mapping and others. The training offers input on potential strategies, backgrounds and insights into technical details of e-commerce solutions.	3	medium (8-15)	Intermediate
51	JKU	Training	E-Learning for employees: Content creation	SMEs often need to ensure knowledge transfer from the organization to new employees or across units. E-learning is an established possibility to achieve this. After participating in this training, SMEs are able to create content for e-learning measures depending on their target group, the contents and the channels chosen. This includes textual, graphical and audiovisual content as well as quizzes, polls and other forms of content creation.	2	medium (8-15)	Intermediate
52	JKU	Training	E-learning for employees: Knowledge transfer, channel selection, and certification	Digital badges are becoming an important phenomenon for HR and educational organizations.This training offers insights for SMEs how to plan e-learning measures for their employees and make them visible using modern digital methods. It aims to enable participants to plan and implement e-learning activities, to ensure consistency in knowledge transfer and to select the right channels for different purposes. Methods and tools for examination, certification and digital badges conclude the training.	2	medium (8-15)	Intermediate
53	JKU	Seminar	Quantitative Methods in Production Planning and Supply Chain Management	This seminar gives an overview of quantitative tools (optimization algorithms as well as modeling approaches) as they are used to support long, medium and short term planning in operations and supply chain management. First, the basic concepts will be discussed, followed by an overview of latest advances in the field. The focus of this module is on the potential of these approaches. The aim is to provide a basic understanding of their underlying logic and how they can provide data-driven decision support. Study material will be provided via an elearning platform (moodle). Remote participation (via ZOOM) is possible. The seminar is split into two approximately three-hour blocks on one day. Participants need their laptops and Internet access. DE: Dieses Seminar gibt einen Überblick über quantitative Werkzeuge (Optimierungsalgorithmen und Modellierungsansätze), die die lang-, mittel- und kurzfristige Produktions- und Supply-Chain-Planung unterstützen. Im ersten Teil des Moduls werden grundlegende Ansätze diskutiert. Im zweiten Teil erhalten die Teilnehmer*innen einen Überblick über den aktuellen Forschungsstand. Der Fokus des Moduls liegt auf dem die Potential der diskutierten Ansätze. Ziel ist es ein grundlegendes Verständnis für die Logik der verschiedenen Methoden und Modelle zu vermitteln and wie sie Daten-basierte Entscheidungsunterstützung liefern können. Kursmaterial wird via Moodle zur Verfügung gestellt. Online-Zuschaltung via ZOOM ist möglich. Das Seminar wird an einem Tag in zwei Blöcken zu je ca. drei Stunden stattfinden. Teilnehmende benötigen einen Laptop und Internetzugang.	1	medium (8-15)	Intermediate
54	JKU	Training	Prescriptive Analytics/Optimization	This training gives an hands-on-overview of prescriptive analytics and optimization and how these techniques are used in operations and supply chain management. The participants learn how to model typical problems occuring in this area via linear programming and integer programming. Next to learning how to model, the participants also learn how to implement and solve these problems using standard optimization software tools. This will empower the participants to enable data-driven decision making for problems encountered in their field of business.	1	medium (8-15)	Intermediate
55	JKU	Training	Autonomous Vehicles Seminar		1	medium (8-15)	Intermediate
56	JKU	Training	Data Analysis for Efficient Transport	Knowledge of Python (or another programming language) is expected. Study material will be provided via an elearning platform (moodle). Remote participation (via ZOOM) is possible. The seminar is split into two approximately three-hour blocks on one day. Participants need their laptops and Internet access.	1	medium (8-15)	Intermediate
~~57~~	~~JKU~~	~~Training~~	~~Fundamentals of Data Engineering~~		1	medium (8-15)	Beginner
58	JKU	Training	Fundamentals of Knowledge Graphs	Will be provided soon (Christoph Schütz)	2	medium (8-15)	Intermediate
59	JKU	Training	Fundamentals of Business Intelligence and Analytics	Will be provided soon (Christoph Schütz)	2	medium (8-15)	Intermediate
~~60~~	~~JKU~~	~~Training~~	~~Fundamentals of Big Data and Real-Time Analytics~~		2	medium (8-15)	Intermediate
~~61~~	~~JKU~~	~~Training~~	~~Introduction to Artificial Intelligence~~		2	medium (8-15)	Beginner
~~62~~	~~JKU~~	~~Training~~	~~Introduction to Data Mining, Predictive and Prescriptive Analytics~~		2	medium (8-15)	Intermediate
63	JKU	Workshop	Applications of Business Intelligence and Analytics in Industry	Will be provided soon (Christoph Schütz)	1	medium (8-15)	Intermediate
~~64~~	~~JKU~~	~~workshop~~	~~Applications of Artificial Intelligence in Industry~~		1	medium (8-15)	Intermediate
65	JKU	Workshop	Conceptualizing Digital Transformation	Using concrete examples, participants learn to systematically capture and understand application areas of digital transformation, its technical foundations, and potentials	1	medium (8-15)	beginner
66	JKU	Workshop	Business Development Garage		2	medium (8-15)	Beginner
203	JKU	Workshop	Organisationsdesign im Kontext der digitalen Transformation Organizational design in the context of digital transformation	Using current scientific insights into organizational design in the context of digital transformation, participants learn to assess the digital transformation readiness of their organization and derive actionable measures. // Anhand aktueller wissenschaftlicher Erkenntnisse zur Organisationsgestaltung im Kontext der digitalen Transformation lernen Teilnehmende die digitale Transformationsbereitschaft ihrer Organisation einzuschätzen und Handlungsmaßnahmen abzuleiten.	1	medium (8-15)	Beginner
204	JKU	Seminar	Spezifikationen, Daten und Datenerhebung und deren Relevanz für das Kunststoffrecycling	Folgende Fragestellungen werden behandelt: -Welche technischen Parameter gibt es bei Kunststoffen und was bedeuten sie? -Welche technischen Anforderungen haben verschiedene Produkte bzw. Herstellverfahren an Kunststoffe? -Welche Möglichkeiten gibt es, recycelte Kunststoffe zu behandeln? (Waschen, dekontaminieren, Kristalisation, Aufkondensieren, Additive, usw.) -Welche Additive gibt es und wofür? -Farbentwicklung bei Rezyklaten bzw. Färben? -Food-Grade/Non-Food: Unterschiede, welche Kunststoffe gehen für Food, Ausblick? -Rechtliche Vorgaben: EFSA, Migrationsanalysen, Gewährleistung, unterschiede EU/nicht EU usw. Fokus liegt auf den Verpackungskunststoffen (z.B.: PP,PE,PET,PA,PS) mit Exkurs auf technische Kunststoffe (z.B.: PVC,PC, XPS,ABS).	1,5	medium (8-15)	Beginner
204	JKU	Workshop	Shaping Digital Transformation	Based on their organizational problem situations, participants learn to systematically recognize and analyze potentials of digital technology.	1	medium (8-15)	Intermediate
205	JKU	Workshop	Sustainability in Digital Transformation	Based on current scientific insights and analysis methods, participants learn to systematically recognize and assess sustainability aspects of digital transformation projects."	1	medium (8-15)	Intermediate
68	JKU (LIT Factory)	Workshop	AI for Digital Twins in Polymer Processing		0,5	medium (8-15)	Intermediate

69	JKU (LIT Factory)	Workshop	From part design to product - Digital Thread along the value chain in polymer injection molding		1	medium (8-15)	Intermediate
70	JKU (LIT Factory)	Workshop	Selected topics in process measurement for polymer processing		1	medium (8-15)	Intermediate
67	JKU (LIT Factory)	Seminar	Digitalization and digital Transformation in Polymer Processing		1	medium (8-15)	Beginner
73	JKU (LIT Factory)	Seminar	Plastics recycling with focus on digitalization		2	individual, large (16>50)	Intermediate
71	JKU (LIT Factory)	Training	Production Process Data Acquisition, Analysis and Process Optimization		2	medium (8-15)	Beginner
72	JKU (LIT Factory)	Seminar	Plastics recycling in theory and practice		2	medium (8-15)	Beginner
74	LCM	Workshop	Digital twins: SyMSpace Days. Learn how to use the service platform SyMspace and the software tool HOTINT.	This workshop offers insight into the two platforms SyMSpace and HOTINT using examples of digital twins. SyMSpace can connect single steps to a workflow by linking all involved software tools and managing the data transfer. This makes it easy to save the workflow for later or to run it multiple times with changed parameters. A suitable workflow also allows you to transfer the task to a less experienced colleague or to explain the whole design process to your customer. HOTINT, on the other hand, is a free software package for modeling, simulation and optimization of mechatronic systems, especially flexible multibody systems. It includes solvers for static, dynamic and modal analyses, a modular object-oriented C++ system framework, a comprehensive element library, and a graphical user interface with tools for visualization and post-processing.	2	small (2-7)	Intermediate
75	LCM	Workshop	Component Space Days. Learn how to use SyMSpace to modularize knowledge and to create a component.	This workshop offers further insights to the platform SyMSpace and its additional functionalities. The SyMSpace Component Space lets you store model parts which are frequently used. That's what we did for the electric motor design: The SyMSpace MotorBox holds all available rotor Components, stator Components, postprocessing Components, simulation Components, etc. for fast workflow creation. Once you've setup a workflow, use the SyMSpace Optimizer to auto-execute it over and over again: Simply choose the input parameters to vary and the output values to optimize. We've included genetic algorithms to quickly find the optima you are looking for. SyMSpace already includes interfaces to a number of free or commercial third party tools.	2	small (2-7)	Beginner
76	LCM	Seminar	Mechanische Schwingungen. Verstehen, Messen, Vermeiden, Nutzen, Erzeugen.	Mechanische Schwingungen und Lärm stellen in vielen Bereichen der Produktion ein unerwünschtes Problem dar. Auf der anderen Seite werden Schwingungen auch gezielt erzeugt, um Prozesse besser zu gestalten (z.B. Fördertechnik) oder als wertvolle Informationsquelle (z.B. Condition Monitoring) sowie in Spezialfällen auch als Energiequelle (Energy Harvesting) zu dienen. Gerade für die Nutzung von Schwingungen sind effiziente Simulationen und moderne Datenauswertung (u.a. auch mit Künstlicher Intelligenz) mittlerweile Standard. Agenda: - Motivation und Einführung - Physikalische Größen zur Beschreibung von Schwingungen - Schwingungen messen, simulieren, dämpfen/vermeiden - Diskussion und Übungen anhand von Praxisbeispielen der Teilnehmer:innen - Schwingungen nutzen (als Energiequelle, Informationsquelle, etc.) - Schwingungen erzeugen - Diskussion und Übungen anhand von Praxisbeispielen der Teilnehmer:innen - Demonstrationen im Labor: Schwingungen messen, dämpfen/vermeiden, nutzen	1	medium (8-15)	Beginner
79	LCM	Seminar	Virtuelle Inbetriebnahme. Von der Übernahme der CAD-Daten über die Kinematisierung der Anlage bis zur Ablaufsimulation und Kopplung einer SPS.	Die fortschreitende Automatisierung macht Maschinen und Anlagen intelligenter und schneller. Die steigende Anzahl von integrierten Sensoren und Aktuatoren erlaubt die vollautomatische Abarbeitung unterschiedlichster Aufgaben und gleichzeitig höchste Flexibilität in der Anpassung der einzelnen Schritte. Schlussendlich ist es die Software, welche den Takt vorgibt und das korrekte Zusammenspiel der Aktoren sicherstellt. Die steigende Komplexität dieser Steuerungssoftware stellt viele vor eine große Herausforderung. Der Einsatz geeigneter digitaler Werkzeuge kann Ihnen hierbei eine entscheidenden Unterstützung liefern. Agenda: - Einführung und Überblick zur virtuellen Inbetriebnahme - Übernahme von CAD-Daten - Kinematisierung der Anlage - Definition von Sensoren und Antrieben - Schrittweiser Aufbau einer Ablaufsimulation - Vorführung Kopplung einer SPS	1	medium (8-15)	Intermediate
77	LCM	Seminar	Einführung in die Mehrkörpersimulation. Simulation von mechanischen bzw. mechatronischen Systemen im Rahmen der Mehrkörperdynamik (MKS).	Der Einsatz von Simulationstools in der Konstruktion und Entwicklung hat sich in vielen Anwendungsbereichen etabliert, um das Verhalten komplexer Komponenten und Systeme besser zu verstehen, die Design- und Entwicklungsprozesse zu unterstützen, Prototypen einzusparen und Entwicklungszeiten zu reduzieren. Modellbasierte, digitale Entwicklungsmethoden und virtuelles Prototyping gewinnen mit den stetig wachsenden Anforderungen des Marktes zunehmend an Bedeutung. Agenda: - Überblick und Einführung in die Mehrkörpersimulation - Einführung in HOTINT - Skriptsprache und GUI (Hands-On) - Kräfte, Randbedingungen, Sensoren, IO-Elemente - Solver - Weiterführende Themen (je nach Zeit und Teilnehmerwunsch)	1	medium (8-15)	Beginner

78	LCM	Seminar	Der Elektromotor. Von der Motorentwicklung mit digitalem Zwilling bis zur Inbetriebnahme (Hands-On).	Die Entwicklung von energieeffizienten und ressourcenschonenden Elektromotoren gewinnt an immer größerer Bedeutung. Aufgrund der komplexen Zusammenhänge ist der Einsatz von digitalen Modellen aus unterschiedlichen physikalischen Domänen sowie leistungsstarker Optimierung unumgänglich. Im Rahmen dieser Schulung wird der Bogen der Entwicklung eines elektrischen Antriebes vom Design und der Optimierung über die Erstellung eines digitalen Zwillings bis hin zur Inbetriebnahme dieses Antriebes gespannt. Agenda: - Motivation und Einführung - Design und Optimierung (Hands-On) - Digitaler Zwilling - Einführung in die Regelung eines Elektromotors - Inbetriebnahme eines permanenterregten Synchronmotors (Hands-On) - Zusammenfassung	1	medium (8-15)	Beginner
80	LCM	Seminar	Industrial IoT, Wireless Communication and Energy Harvesting.	Dieses Seminar bietet Einblicke in die Themen Industrial IoT, Wireless Communication und Energy Harvesting. Diese drei Themenfelder sind von entscheidender Bedeutung für das Design und die Entwicklung von drahtlosen, eingebetteten und intelligenten Sensoren. Diese Sensoren sind für eine moderne Erfassung von physikalischen Größen in verschiedensten industriellen Anwendungsgebieten relevant und erst die Kombination dieser Themenfelder ermöglicht die Umsetzung von anspruchsvollen Sensorik-Lösungen. Agenda: - Industrial IoT & Data Processing Cycle - Wireless Communication Theory - Wireless Communication Hands-On - Energy Harvesting - IoT, Cloud & Algorithms - Summary	1	medium (8-15)	Beginner
82	PIA	Coaching	Industry 4.0 Coaching for SMEs - SMEs with specific focus areas can find a coach through PIAs expert network		0,5	individual, large (16>50)	Intermediate
81	PIA	Workshop	"How to DIVE into Industry 4.0" - workshop for SMEs not familiar with the topic, introduction to major Austrian organizations/institutions that support SMEs, overview presentation and further discussion		0,5	large (16>50)	Beginner
84	RIC	Workshop	Digitale Tools II	Advanced: UR10 Programming, Technical Drawing New content: Introduction to programming, fundamentals of industrial production Visits: Industrial robot, HP Fusion Jet (3D printer), laser engraver, production, apprentice workshop/RIC trainingscenter	1	small (2-7)	intermediated
83	RIC	Workshop	Digitale Tools	introduction to operation/programming of collaborative robots; design possibilities with 3D printing; design possibilities with laser cuter	0,5	small (2-7)	Beginner
85	RIC	Workshop	Fit for the digital world of work	5 modules (Basic, data security, online communication, video communication, online communication part 2 + course completion	1	small (2-7)	Beginner
86	SBA	Training	Threat Modeling Fundamentals	The most costly security problems are usually related to the software architecture. Threat modeling is an effective tool to systematically uncover these security problems. It is an important and effective part of a secure software development process and an optimal complement to penetration testing and automated code scanning.	1	medium (8-15)	Intermediate
87	SBA	Training	Secure Software Development Lifecycle Fundamentals	In this introductory training you learn how to approach the topic of software security in a holistic way. We highlight different perspectives, ranging from governance topics to technology-heavy topics such as design, development, testing and operations. The content is aligned with the OWASP SAMM, a maturity model for software security assurance.	1	medium (8-15)	Intermediate
90	SBA	Training	Application Security Design Patterns	This training provides an overview on different design patterns and general guidelines that lead to more maintainable and secure software. Examples of covered topics include: Programming Language Security Criteria, Trust Boundaries, API Gateways, Monoliths vs. Microservices, The Principle of Least Privilege, and more.	1	medium (8-15)	Intermediate
91	SBA	Training	Modern Programming Languages and Concepts	This training provides an introduction to modern trends in the world of programming languages. This includes different approaches to concurrency, the functional programming paradigm, and the Domain-Driven Design strategy for application design.	0,5	medium (8-15)	Intermediate
92	SBA	Training	Data Privacy	This training provides an overview on data regulations such as the GDPR and its demands on privacy by design and rights for data subjects. In addition you learn about disclosure risks and methods to protect sensitive data, including synthetic data and anonymization.	1	medium (8-15)	Intermediate
93	SBA	Training	Machine Learning Fundamentals	This training provides an introduction to Machine Learning and equips you with the fundamental skills required to develop your own ML solutions. You get a basic understanding on how to identify Machine Learning opportunities and to describe and integrate them into your processes, how to conduct data preprocessing, how to apply common algorithms, how to evaluate the performance of your solutions, and how and when to deploy them.	1	medium (8-15)	Intermediate
94	SBA	Training	Robustness & Security of Machine learning	The wide adoption of Machine Learning also presents new challenges in terms of their security and robustness to attacks. In this training you learn to identify threats and get an overview on attack vectors to machine learning models, which can lead to malfunction of the ML models, or leak information on the training data. Finally you are introduced to available countermeasures to protect your systems.	1	medium (8-15)	Intermediate
95	SBA	Training	Advanced Linux Security for Embedded Systems	This training is targeted to embedded engineers and software developers in the automotive domain who deal with Linux variants in their products and services. It is a deep dive into the internals of Linux to create functional hardening measures within embedded systems or backend services. This course demonstrates hands-on security measures by practical hacking techniques to understand their effective use.	2	medium (8-15)	Intermediate
96	SBA	Training	Fuzzing and Static Code Analysis for C/C++ Software	This training is targeted to embedded engineers and software developers in the automotive domain. The training shows state of the art techniques to identify security vulnerabilities in embedded systems and covers black-box (only devices and binary programs) and white-box (with source code) approaches. The course shows the origin and classes of security bugs and how they can be identified via fuzz testing, static code analysis and reverse engineering. This hands-on course works with source code, binary programs and black-box systems.	2	small (2-7)	Intermediate
97	SBA	Training	Container Security Internals - Building Blocks of Cloud (Docker/Podman/Kubernetes)	The participants of this training learn how containers work and what security measures are set behind the curtains The key objective is to gain an overview on how security measures are influenced by the container runtime/orchestrator and what is left to the administrators and developers. This hands-on course shows security vulnerabilities by example.	2	medium (8-15)	Intermediate
88	SBA	Training	Security Awareness Training	In addition to technical and organizational security deficiencies, the "human factor" is one of the greatest security risks in any company. Well-trained staff can detect attack attempts and violations of corporate guidelines at an early stage and thus make an essential contribution to the level of information security within the company.	0,5	medium (8-15)	Beginner
89	SBA	Training	Cyber Security Fundamentals	This training gives an overview on essential cybersecurity aspects, including threat analysis, technical and organizational measures, information security management, security standards and best practices.	1	medium (8-15)	Beginner
98	SCCH	Workshop	Opportunities and Limitations of AI, a high level view with examples		1	medium (8-15)	beginner
99	SCCH	Workshop	ML-Ops		1	medium (8-15)	beginner

102	SCCH	Workshop	Secure Coding and Testing	Kompetenzerwerb: Die AbsolventInnen erwerben Kenntnisse in der Entwicklung sicherer Software mit Fokus auf Softwareanalyse und Secure Coding und Design. Im ersten Teil werden als Startpunkt die Kernaspekte zu sicherem Code und sicherem Softwaredesign vermittelt. Darauf aufbauend werden Methoden und Techniken zur Analyse von Software mit Fokus auf Security vorgestellt. Die Anwendungen reichen von statischer Programmanalyse bis Softwaremanagement. Im Rahmen von praktischen Übungen wird die Analyse für Abhängigkeiten, Kontroll-/Datenfluss und Design auf Beispiele von den Teilnehmern und Open Source-Projekten angewendet, Praktiken aus Secure Coding anhand dieser Beispiele diskutiert und Security im Zusammenhang mit anderen Qualitätsmerkmalen wie Korrektheit und Robustheit betrachtet. Lehrinhalte: Softwarequalität und Codequalität: Korrektheit, Robustheit, Sicherheit * Security Anforderungen und Software-Entwicklungsprozess * Coding Practices für sichere Software * Statische Analyse für Abhängigkeiten, Kontroll-/Datenfluss, Design * Praktische Übungen: Statische Analyse * Fuzz Testing und Input-Grammatiken	0,5	medium (8-15)	Intermediate
100	SCCH	Workshop	I5.0 Data Quality Pipelines	This training provides an introduction to data quality measurement and improvement and highlights the importance of this topic for data analysts. You will get an overview on available tools to measure and improve data quality and receive a hands-on demonstration with selected tools.	0,5	medium (8-15)	beginner
101	SCCH	Seminar	Human-AI collaboration	The training introduces the topic Human-AI collaboration with the focus on concepts for improving information exchange and trust building. Based on several use cases, best practices and common pitfalls are discussed in detail and linked to different approaches that can be readily applied to one's own problem domain.	0,5	very Large (>50)	beginner
105	SCCH	Workshop	Analysis for PLC-Code		0,5	medium (8-15)	Intermediate
103	SCCH	Workshop	Microservices	Microservices erlauben die Entwicklung von flexiblen, modularen und skalierbaren Systemen. Die Umsetzung dieses Entwicklungsparadigmas erfordert signifikante Änderungen im Entwicklungsprozess - sowohl auf technischer, als auch auf organisatorischer Ebene. Dieses Seminar bietet eine Einführung in das Thema Microservices. Zu Beginn erklären wir was man unter diesem Architekturstil versteht, wie sich Microservices von traditionellen Systemen unterscheiden, und welche Vorteile Microservices versprechen. Im Anschluss stellen wir zentrale Prinzipien vor, die es bei der Entwicklung von Microservices zu beachten gilt.	0,5	medium (8-15)	Beginner
107	SCCH	Workshop	Big-Data Management and Integration for Digital Twins in Industry	This seminar offers an overview of state-of-the-art Big-Data technologies in the context of Predictive Analytics and Digital Twins in Industry. We will present and investigate various technologies for data gathering, processing, storing and visualization. We will primarily emphasize on easy-to-use, easily reproducible, adaptable and configurable Big Data management solutions with an implementation description that does not require expert or domain-specific knowledge. In parallel, we are going to investigate and test standard machine learning and predictive analytics techniques in the context of Big Data in industry. Tentative Agenda: -State-of-the-Art in Big-Data Technologies -Deployment and Configuration of Big Data Solutions -Introduction to Predictive Modeling and Learning -Design of Industrial Digital Twins using Big Data	1	medium (8-15)	Intermediate
104	SCCH	Seminar	Human-Centered Design: "Don't ask your Users!"	Das Seminar „Fragen Sie ja nicht ihre Nutzer" bietet eine Einführung in den Nutzer-zentrierten Designprozess. Dazu gehört sowohl die Definition und Abgrenzung der beiden häufig synonym verwendeten Begriffe „User Experience" und „Usability", als auch die Unterschiede im Softwareentwicklungsprozess mit klassischer Anforderungserhebung und mit Einbindung des Endnutzers, die an Hand eines anschaulichen Beispiels erklärt werden. Außerdem werden Methoden der nutzer-zentrierten Entwicklung in den verschiedenen Projektphasen vorgestellt.	0,5	medium (8-15)	Beginner
106	SCCH	Lecture	Knowledge Graphs	Knowledge Graphs are currently one of the most popular approaches to knowledge representation. Capturing relationships among key entities has shown a high practical impact when building state-of-the-art intelligent systems. User applications such as semantic search, question answering, and recommender systems and the latest research on explainable AI systems have made them attract much attention in recent times. The focus of this seminar will be on having an overview of what is necessary to design, implement, and work with knowledge graphs. We will learn from classical approaches such as knowledge encoding using RDF, enriching them with OWL, or querying via SPARQL to more advanced techniques for the latent representation of knowledge using embeddings. Finally, we will survey some of the most popular applications of knowledge graphs. Contents: 1. Introduction to Knowledge Graphs (20min) 2. A historical perspective (40min) 2.1. Ontologies, Linked Data, Semantic Web 2.2. Knowledge Graphs 3. Knowledge Graphs. Fundamentals (2h) 3.1. Building Knowledge Graphs 3.2. Storing Knowledge Graphs 3.3. Exploiting Knowledge Graphs 4. Knowledge Graphs. State-of-the-art (2h) 4.1. Knowledge Graphs for Search 4.2. Semantic Similarity 4.3. Link Prediction 5. Machine Learning and Knowledge Graphs (2h) 5.1. Introduction to the notion of graph embedding 5.2. Most popular techniques for embeddings 5.3. Overview of existing libraries and tools (Ampligraph, pyRDF2Vec, etc.) 6. Knowledge Graph Applications (max 30min) 6.1. Question Answering 6.2. Recommendation Systems 6.3. Other applications	1	large (16>50)	Beginner
109	TU Wien		Problem-Solution Fit workshop "From the Idea to the prototype"	A couple of great methods to adress the real problem will be introduced to the SMEs that they will be able in future to develope the solution in the right direction and not left or right around the problem. In the first part there will be an introducting and afterwoods a practical example.	0,5	medium (8-15)	Intermediate
110	TU Wien		Wire-Arc Additive Manufacturing				
111	TU Wien	Training	Human - robot ineraction in the production		2	medium (8-15)	Intermediate
112	TU Wien	Training	Digitale Assistenzssysteme und Augmented Reality		2	medium (8-15)	Intermediate
113	TU Wien	Training	Ergonomie, Arbeitsteilung und Arbeitsorganisation		2	medium (8-15)	Intermediate
115	TU Wien	Training	Industrial AI/Data Science		2	medium (8-15)	Intermediate
108	TU Wien	Workshop	Design Thinking and process innovation methods	SMEs will get an overview over the design thinking method and creativity techniques. They will get familiar with the micro and macro cycle of design thinking. In the second part there will be a deeo dive with a hands on example.	0,5	medium (8-15)	Beginner
114	TU Wien	Training	Smart Maintenance		2	medium (8-15)	Beginner
116	TU Wien	Seminar	Digitale Tools als Schlüssel zur Umsetzung von Kreislaufwirtschaft in Produkten und Geschäftsmodellen	Bewusstseinsbildung zum Thema Kreislaufwirtschaft und Nachhaltigkeit, Vorstellen einer Methodik und Tools zur Umsetzung von KLW in Produkten und Geschäftsmodellen, Erkennen von Verbesserungspotentialen der Kreislaufwirtschaft in den eigenen Produkten und Geschäftsmodellen, Erhöhung des digitalen Reifegrads in den Unternehmen	2	medium (8-15)	Beginner
117	TU Wien	Lecture	Summer School / Seminar Produkt- und Geschäftsmodellentwicklung für eine Kreislaufwirtschaft (allg.)	Bewusstseinsbildung zum Thema Kreislaufwirtschaft und Nachhaltigkeit, Vorstellen einer Methodik und Tools zur Umsetzung von KLW in Produkten und Geschäftsmodellen, Erkennen von Verbesserungspotentialen der Kreislaufwirtschaft in den eigenen Produkten und Geschäftsmodellen, Erhöhung des digitalen Reifegrads in den Unternehmen	5	large (16>50)	Beginner
118	TU Wien	Lecture	Summer School / Seminar Produkt- und Geschäftsmodellentwicklung für eine Kreislaufwirtschaft-NEU: Sektorspezifisch – mögliche Sektoren Bau, Verpackung, Elektronik	Sektorspezifische Bewusstseinsbildung zum Thema Kreislaufwirtschaft und Nachhaltigkeit, Vorstellen einer Methodik und Tools zur Umsetzung von KLW in Produkten und Geschäftsmodellen, Erkennen von Verbesserungspotentialen der Kreislaufwirtschaft in den eigenen Produkten und Geschäftsmodellen, Erhöhung des digitalen Reifegrads in den Unternehmen	5	large (16>50)	Beginner
119	TU Wien	Workshop	Workshop für Start-ups zur Integration von Kreislaufwirtschaft in deren Geschäftsmodel anhand Business Model Canvas	Bewusstseinsbildung zum Thema Kreislaufwirtschaft und Nachhaltigkeit, Vorstellen einer Methodik und Tools zur Umsetzung von KLW in Produkten und Geschäftsmodellen für Start-ups	1	large (16>50)	Beginner

120	TU Wien	Workshop	Workshop – Rechtliche Anforderungen zu Kreislaufwirtschaft: Ecodesign Directive, Energielabel, Kreislaufaktionsplan der EU, Richtlinie zu Kritischen Rohstoffen, etc.	Bewusstseinsbildung zum Thema Kreislaufwirtschaft und Nachhaltigkeit	1	individual, large (16>50)	Beginner
121	TU Wien	Coaching	Begleitung von Unternehmen bei der Entwicklung kreislauffähiger Produkte & Geschäftsmodelle – Erstgespräch-Grobanalyse-Strategieauswahl	Gemeinsame Entwicklung kreislauffähiger Produkte & Geschäftsmodelle – Erstgespräch-Grobanalyse-Strategieauswahl	1	individual, large (16>50)	Beginner
122	TU Wien	Coaching	Begleitung von Unternehmen bei der Entwicklung kreislauffähiger Produkte & Geschäftsmodelle – Grobanalyse (PCF; Kreislauffähigkeit)+ Strategieauswahl + Anforderungen an Produktkonzept und Geschäftsmodellkonzept	Gemeinsame Entwicklung kreislauffähiger Produkte & Geschäftsmodelle – Erstgespräch-Grobanalyse-Strategieauswahl+Anforderungen an Geschäftsmodell und Produkt	3		Beginner
123	TU Wien	Coaching	Begleitung von Unternehmen bei der Entwicklung kreislauffähiger Produkte & Geschäftsmodelle – inkl LCA, Berechnung Kreislaufindikatoren, etc. Begleitung der Entwicklung Produktkonzept + Geschäftsmodell	Gemeinsame Entwicklung kreislauffähiger Produkte & Geschäftsmodelle – Konzeptentwicklung	10	small (2-7)	Beginner
124	TU Wien / IFT	Workshop	Basics of coordinate measuring machines		2		
125	TU Wien / IFT	Workshop	Tactile and optical roughness measurement		1		
126	TU Wien / IFT	Workshop	Measurement with CT		1		
127	TU Wien / IFT	Workshop	NC-Cutting Optimization with Sensory Tool Holder	In this seminar, trainees will learn how to utilize modern sensors build into machine tools, to optimize machining processes such as milling or drilling. The seminar starts with a theoretical input on sensory systems for cutting processes and compares various products on the market. A hands-on session in the machine tool laboratory of IFT enables the trainees to test the opportunities using selected sensor systems directly, if possible even utilizing their own CNC codes and part designs	2	medium (8-15)	Intermediate
128	TU Wien / IFT	Workshop	NC-Cutting Optimization with Simulation Tools (Cutting FEM, Process Force Calculation etc.)	In this seminar, trainees will learn how to utilize innovative simulation systems, to optimize machining processes such as milling or drilling. The seminar starts with a theoretical input on differences of various simulation systems such as finite element analysis, and highlights opportunities using discussed simulation systems. A hands-on session enables trainees to use a selected simulation software system for a selected use-case.	1	medium (8-15)	Intermediate
131	TU Wien / IFT	Workshop	Robotic Additive Manufacturing Basics (Process, Sensors, CAD/CAM, Simulation…)	This course summarizes main aspects of wire-arc additive manufacturing processes. Companies will learn how to setup a wire-arc cell, how to program the robotic movements using modern CAD/CAM software as well as how to qualify a certain manufacturing part after the welding and finishing process steps (e.g. 3D Scanning, CMM). Additionally, novel aspects of AM simulation will be demonstrated.	5	medium (8-15)	Intermediate
132	TU Wien / IFT	Workshop	Automated NC-Code Generation	This course will enable SMEs to automate their CNC processes using feature-based machining approaches. Utilzing capabilities provided by model-based-definition (e.g. using product manufacturing information) relevant process data can be linked within 3D models direcly, and are used for automated programming. Additionally, automated generation of measurement programs for CMMs is demonstrated.	1	medium (8-15)	Intermediate
129	TU Wien / IFT	Other	CAM Plattform Austria - Yearly Event/Conference at IFT	This seminar is a CAD/CAM focused conference for SMEs as well as large companies. In this 2 day event, various speakers from the industriy as well as scientific staff will highlight state-of-the-art and future trends in the area of CAD/CAM and production digitalization. Various key-notes from international speakers provide novel inputs for the conference participants.	2	large (16>50)	Beginner
134	TU Wien / IFT	Workshop	NC-Programming Course at Machining Center (Advance)	In this advanced course, learning from the CNC simulator will be transferred to a real machine. Simple part programs can be executed utilizing milling equipment. Additionally, trainees have the opportunity to program more complex parts (e.g. 5-Axis Milling)	1	medium (8-15)	Intermediate
130	TU Wien / IFT	Workshop	Automated Lot Size 1 Manufacturing - Overview about Cell Concept	In this seminar, SME will get an overview about relevant elements when setting up flexible manufacturing cells for automated milling processes. The course contains important aspects when moving from 1:1 operator-machine setups, to fully automated cells and covers topics such as CAD/CAM programming, cell controller, robotic programming, zero point clamping systems etc.	5	medium (8-15)	Beginner
133	TU Wien / IFT	Workshop	NC-Programming Course utilizing Virtual Twin Cell (Basics)	This course will provide trainees with a basic hands-on know how about CNC programming utilizing modern simulation capabilities. Trainnes will learn about general concepts such as machine tools, G-Code programming and numerical controls. In the hands-on session, a modern CNC simulator is utilized to test the developed NC programm.	1	small (2-7)	Beginner
137	TU Wien / IFT	Other	Problem/Solution fit for production problems	SMEs will be presented with some great methods to tackle the real problem so that in the future they will be able to develop the solution in the right direction and not left or right around the problem. The focus will be specifically on the production of a company. In the first part there will be an introduction and then a practical example.	3	medium (8-15)	Intermediate
138	TU Wien / IFT	Other	Prozessinnovation in der Fertigungstechnik	Innovations in manufacturing technology are associated with process optimisation and digital transformation. These topics as well as the area of sustainability will be addressed in this workshop.	0,5	medium (8-15)	Intermediate
135	TU Wien / IFT	Workshop	Design Thinking Workshop	SMEs will get an overview over the design thinking method and creativity techniques. They will get familiar with the micro and macro cycle of design thinking. In the second part there will be a deeo dive with a hands on example.	1	medium (8-15)	Beginner
136	TU Wien / IFT	Workshop	Ideation and Innovation	In this workshop, the idea generation phase will be explicitly scrutinised. This concerns idea generation for product, process and business model innovations. Methods from the fields of thinking, agile management and BMC will be presented and practically applied.	2	medium (8-15)	Beginner
139	TU Wien / IMW – via subcontracted partner	Seminar	Data-driven Production Planning		1	medium (8-15)	
140	TU Wien / IMW – via subcontracted partner	Seminar	Reinforcement Learning in practice		1	medium (8-15)	
141	TU Wien / IMW – via subcontracted partner	Training	Data Engineering with Python		1	medium (8-15)	
142	TU Wien / IMW – via subcontracted partner	Seminar	Advanced Factory Planning		1	medium (8-15)	
143	TU Wien / IMW – via subcontracted partner	Training	Basics of Simulation and Optimization		2	medium (8-15)	
144	TU Wien / IMW – via subcontracted partner	Training	Advanced Simulation and Optimization		2	medium (8-15)	
145	TU Wien / IMW – via subcontracted partner	Training	Technology and Innovation Management		2	medium (8-15)	
146	TU Wien / IMW – via subcontracted partner	Training	Innovative Tools and methods in maintenance		1	medium (8-15)	
147	TU Wien / IMW – via subcontracted partner	Training	Additive Manufacturing		1	medium (8-15)	

148	TU Wien / IMW – via subcontracted partner	Seminar	Digital Twin in practice	0,5	very Large (>50)	
149	TU Wien / IMW – via subcontracted partner	Seminar	Robotic – TÜV certificated seminar	2	medium (8-15)	
150	TU Wien / IMW – via subcontracted partner	Webinar	Sustainability in Product Development	0,5	very Large (>50)	
151	TU Wien / IMW – via subcontracted partner	Seminar	Resilience Management	0,5	very Large (>50)	
152	TU Wien / IMW – via subcontracted partner	Seminar	Economic Sustainability in SMEs	0,5	very Large (>50)	
153	TU Wien / IMW – via subcontracted partner	Training	Lean 4.0	2	medium (8-15)	
154	TU Wien / IMW – via subcontracted partner	Seminar	Business Models in Production 4.0	0,5	very Large (>50)	
155	TU Wien / IMW – via subcontracted partner	Training	Circular economy strategies and their embedding in a sustainability roadmap	2	medium (8-15)	
156	TU Wien / IMW – via subcontracted partner	Training	Climate-neutral production - CO2 balancing, project planning and certification	2	medium (8-15)	
157	TU Wien / IMW – via subcontracted partner	Training	Online planning game "Digitization of your business model"	1	medium (8-15)	
158	TU Wien / IMW – via subcontracted partner	Training	Joint Optimization of Productivity, Sustainability and Resilience	1	large (16>50)	
159	TU Wien / IMW – via subcontracted partner	Training	Digital Business models and Service concepts	1	medium (8-15)	
160	TU Wien / IMW (Ansari & Schlund)	Seminar	Industry 4.0 - From Vision to Reality	0,5	very Large (>50)	
161	TU Wien / IMW (Ansari & Schlund)	Training	Digital Factory Planning	3	medium (8-15)	
162	TU Wien / IMW (Ansari & Schlund)	Seminar	Competence Management in SMEs	1	medium (8-15)	
163	TU Wien / IMW (Ansari & Schlund)	Seminar	Learning Factories for/in SMEs	0,5	very Large (>50)	
164	TU Wien / IMW (Ansari & Schlund)	Seminar	Sustainable Production Management	1	large (16>50)	
165	TU Wien / IMW (Ansari)	Seminar	Basics of Industrial Data Science (IDS)	2	medium (8-15)	
166	TU Wien / IMW (Ansari)	Seminar	Advanced IDS	2	medium (8-15)	
167	TU Wien / IMW (Ansari)	Training	Self-paced IDS Training	3	very Large (>50)	
168	TU Wien / IMW (Ansari)	Seminar	Basics of Industrial Information Systems	2	medium (8-15)	
169	TU Wien / IMW (Ansari)	Training	Industrial Text Mining	1	medium (8-15)	
170	TU Wien / IMW (Ansari)	Seminar	Cobots in Maintenance	1	very Large (>50)	
171	TU Wien / IMW (Ansari)	Seminar	Predictive Maintenance	1	medium (8-15)	
172	TU Wien / IMW (Ansari)	Seminar	Process Mining	1	very Large (>50)	
173	TU Wien / IMW (Schlund)	Training	Digital Simulation- Ergonomic and Robotics	3	medium (8-15)	
174	TU Wien / IMW (Schlund)	Seminar	Safety and Security	1	large (16>50)	
175	TU Wien / IMW (Schlund)	workshop	Cobots in Makerspaces	1	medium (8-15)	
176	TU Wien / IMW (Schlund)	Training	Intuitive Cobots programing	2	medium (8-15)	
177	TU Wien / IMW (Schlund)	Training	Process Management	2	medium (8-15)	
178	TU Wien / IMW (Schlund) and subcontracted partner	Training	Digital Assistance Systems (TÜV certificated course)	3	medium (8-15)	
179	UNIVIE	Training	Core Data Science Skills Camp I: Doing Data Science	0,5	large (16>50)	Beginner
180	UNIVIE	Training	Core Data Science Skills Camp II: Essentials of Machine Learning	0,5	large (16>50)	Beginner

181	UNIVIE	Training	Core Data Science Skills Camp III: Process Management		0,5	large (16>50)	Beginner
182	UNIVIE	Training	Core Data Science Skills Camp IV: Ethics		0,5	large (16>50)	Beginner
183	UNIVIE	Training	Core Data Science Skills Camp V: Legalities		0,5	large (16>50)	Beginner
184	UNIVIE	Training	Core Data Science Skills Camp VI: Security		0,5	large (16>50)	Beginner
199	UNIVIE	Seminar	Industrie 5.0 Ethik I: Grundlagen der Roboter- und KI-Ethik	0,5	Beginner	Learn fundamentals of ethics in robotics and AI	AI
200	UNIVIE	Seminar	Industrie 5.0 Ethik II: Angewandte Technikethik	0,5	Beginner	Enhanced insights in human-centered ethical practice	Digital Production
201	UNIVIE	Workshop	KI-Ethik kreativ üben	0,5	Beginner	Skill development in the field of AI ethics	Digital Design
202	UNIVIE	Workshop	Verantwortungskonflikte technikethisch analysieren	0,5	Beginner	Expanding ethical skills with respect to Industry 5.0 applications	Digital Production
186	VRVis	Seminar	Advanced Mobile Augmented Reality	Expanding on seminar #183, this course will concentrate on the specific user interface decisions and content creation methods for mobile AR. Design and development of a smartphone app for a - simple - application scenario of the respective participant. Participants will gain an understanding of the process of mobile AR development for their own area, and will create a skeleton application for their specific use case.	2	medium (8-15)	Intermediate
185	VRVis	Seminar	Mobile Augmented Reality	Introduction in the methods of mobile (cellphone) augmented reality. Hands-on development of a small example app employing location based data, marker-based tracking, and 3D rendered overlays. Participants will gain an overview of the problems that can be solved using mobile AR, and a basic understanding how it can be implemented.	2	medium (8-15)	Beginner
189	VRVis	Lecture	Lectures in the field of Visual Computing and Artificial Intelligence	A Series of lectures that cover topics at the intersection of Visual Computing and AI. Examples are Deep Learning for Imaging and Video Data, Geometric Data and Point Clouds, Deep Learning for Visualization, Real Time Rendering and Scene Understanding and others. The selection of topics can be adapted to the special demands of the audience.	3	large (16>50)	Intermediate
187	VRVis	Lecture	Web-based information visualization	Web-based representation of information brings great benefit in terms of accessibility, but also great challenges in terms of network usage and data size. In this lecture we discuss possible application use cases for web-based analytics and which technologies/libraries/applications can be applied	1	large (16>50)	Beginner
188	VRVis	Consulting	Consulting on the topics AI for Visual Computing and Visual Computing for AI	We offer consulting on all topics at the intersection of Visual Computing and AI. Example topics are Deep Learning(DL) for Analytics of Imaging and Video Data, DL for Processing and Analytics of Geometric Data, Point Clouds, Spatial and Time dependent Data. Deep Learning in Visualization, Real Time Rendering and Scene Understanding. Selection of topics and consulting activities will be tailored to the special demands of the respective company.	1	small (2-7)	Beginner
190	VRVis	Lecture	Accessible Interfaces to Data	Participants learn to design accessible interfaces for data exploration, to include people with impairments (such as color vision deficiencies).	0,5	medium (8-15)	Beginner
191	VRVis	Consulting	Applied Immersive Analytics for Industry 5.0	Immersive Analytics describes the usage of VR/AR technologies in data analytics. In this event we will discuss possible use cases and application areas as well as technical requirements.	0,5	individual	Beginner
192	VRVis	Consulting	Interactive Visualization for Decison Making	Introduction to interactive methods for decision making and support in selection of appropriate methods depending on user data and tasks.	0,5	individual	Intermediate
193	VRVis	Consulting	Applied AI for Geometry Processing and Analytics	Techniques to convert, clean, simplify and manipulate geomtery. Methods to analyse geometry to derive properties.	2	individual	Intermediate
194	VRVis	Consulting	Point Cloud Processing and Reconstruction	Consulting on point cloud data from various sources and methods for processing such as cleaning, simplification, mesh building, edge and plane fitting.	1	individual	Intermediate
195	VRVis	Consulting	Human Centered, Trustworthy and Explainable Artificial Intelligence in Practice	Consulting activities tailored to the needs of the respective customers on the design and implementation of a Human Centered AI solutions.	0,5	individual	Intermediate
196	VRVis	Lecture	Interactive Visualization for Simulation Data	Analysis and exploration of simulation data is a challenging problem. In case of simulation experiments or ensembles, interactive visualization represents a premium method to comprehend complex data and underlying physical phenomena. We present numerous cases where simulation has been used to tune the models, find optimum parameter settings, or steer simulation experiment creation.	1	small (2-7)	Intermediate
197	VRVis	Workshop	Reconstruction for Digital Twins	How to generate digital representations of physical objects. Introduction in different methods of reconstruction: e.g. photogrammetry, LIDAR, ML. The methods will be explained and demonstrated, followed by hands-on experience of the participants wth data capturing hardware and reconstruction software. The goal is to gather an understanding how everyday objects can be converted into digital representations of their appearance and geometry.	1	individual	Beginner
198	VRVis	Workshop	Developement of Data and Infrastructure Visualization Strategies for Individual Use Cases	Data visualization is an essential tool for exploring large amounts of data. However, data needs also be provided in sufficient quality and at proper scales. In this course we discuss solutions for data fusion, data joining, data analytics, and data visualization	1	individual	Beginner