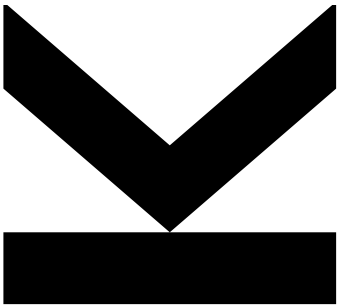
UK 066/390

CURRICULUM FOR THE MASTER'S PROGRAMME IN **DIGITAL ENERGY SOLUTIONS.**



Joint Master's Programme with the University of Applied Sciences Upper Austria (FH OÖ)

JOHANNES KEPLER UNIVERSITY LINZ

OBERÖSTERREICH

UNIVERSITY OF APPLIED SCIENCES UPPER AUSTRIA

Contents

§ 1 Qualification Profile

Overview of the Programme and Graduate Profile

The field of energy supply and utilisation is undergoing a profound transformation in the 21st century, driven by the challenges of climate change, the need for sustainable energy transitions, and rapid advances in digitalisation. New technologies for energy generation, distribution, storage, control, and use are emerging at a remarkable pace, while policy and regulatory frameworks at the European and global level are actively steering this change. In this context, modern energy solutions demand an integrated approach: technology, economics, and regulation are inextricably linked and must be considered interdisciplinary. Energy systems and markets are increasingly international in scope – spanning European grids, global supply chains, and cross-border networks – even as many implementation challenges remain rooted in national or local contexts. Energy cost and reliability are also fundamental to economic competitiveness, underlining the urgent need for experts who combine technical, economic, and regulatory insight to guide private and public organisations through the energy transition.

Digital Energy Solutions (DES) is a joint Master's programme, explicitly designed to connect the multiple dimensions of modern energy systems into a cohesive educational programme. It produces graduates with a comprehensive understanding of contemporary energy systems – spanning the entire value chain from generation, transmission and distribution to consumption, automation, and services, as well as energy markets and regulatory frameworks. Students learn to deploy digital technologies such as data spaces, artificial intelligence (AI), and advanced software solutions in targeted ways within the energy sector. They also develop the ability to understand the specific requirements of businesses, industries, households, and energy markets, translating these needs into holistic and practical energy solutions. Furthermore, graduates can conceptualise and implement energy systems that are sustainable, economically viable, and secure, balancing technical innovation with economic and environmental considerations, while adhering to the legal framework.

In essence, the programme educates "Energy Solutions Engineers" – well-rounded generalists who can competently lead and shape interdisciplinary energy projects in companies, public institutions, and other organisations from the initial concept through to implementation. The curriculum's design reflects the profile of a practice-oriented advanced degree: it is international in outlook, interdisciplinary in scope, and closely aligned with industry and societal needs. Students benefit from a learning environment that integrates engineering, information technology, economics, sustainability management, and an understanding of regulatory frameworks, ensuring they graduate with a multifaceted skill set suited to the complex demands of the global energy sector. This interdisciplinary and international focus, combined with strong practical relevance, fills a critical skills gap and prepares graduates to become key drivers of the sustainable energy transition in various professional arenas.

Main Application Domains and Employment Sectors

Graduates of the Digital Energy Solutions programme enter a broad interdisciplinary field at the intersection of energy technology, digitalisation, economics, and regulation. They are equipped to design, plan, implement, manage, and optimize energy systems in environments characterized by sustainability goals, internationalization, and the growing use of digital technologies. The career opportunities are diverse and span a wide range of application domains and industry sectors, including but not limited to:

- Energy Generation, Transmission & Distribution: Roles at electric utilities, grid operators, municipal energy providers, and international energy companies, contributing to the integration of renewables, smart grid management, and cross-border network operations.

- Industrial and Commercial Enterprises: Positions in energy-intensive manufacturing companies or commercial firms focused on energy efficiency and sustainability, where graduates help optimize industrial energy use, improve processes, and implement clean energy solutions.
- Building Energy Management and Smart Cities: Opportunities in real estate and facility management, urban energy departments, or smart building/city projects, managing building automation, district energy systems, and improving energy efficiency in residential and commercial buildings.
- Consulting and Energy Services: Roles in energy consulting firms, sustainability-focused management consultancies, or IT-driven energy service providers, advising on energy efficiency, carbon management, digital energy platform implementation, and innovative business models for the energy transition.
- Finance and Investment: Careers in sustainable finance, project development, or insurance, where graduates evaluate and finance energy projects (e.g. renewable installations, smart grid infrastructure) and assess risks and returns for green investments and energy ventures.
- Public Administration and Regulatory Bodies: Positions in government agencies, energy and environment ministries, regulatory authorities, or European/international institutions focused on energy policy, market regulation, and climate protection, where graduates contribute expert analysis and help formulate policies and regulations.
- Research and Development: Opportunities in universities, applied research institutes, or corporate R&D departments working on energy technology innovation and digitalisation. Graduates engage in research projects, develop new technologies or services (e.g. energy IoT solutions, AI for energy management, software solutions in the Energy sector), and contribute to cutting-edge advancements in the field.

This wide array of job sectors reflects the interdisciplinary applicability of the skills acquired. Whether improving operational efficiency in industry, shaping smart city initiatives, consulting on sustainable energy strategies, or advancing policy and innovation, graduates are prepared to become valuable contributors across the entire energy ecosystem.

Typical Roles and Professional Functions of Graduates

Within these sectors, alumni of the programme can assume numerous professional roles and functions, leveraging their interdisciplinary training. Some typical roles and example positions for Digital Energy Solutions graduates include:

- Energy Solutions Engineer / Project Manager: Leading and managing complex projects at the interface of energy and IT. In this capacity, graduates coordinate interdisciplinary teams to design and deploy integrated energy solutions – for example, implementing a new smart grid initiative, a renewable integration project, or an energy efficiency programme from conception through rollout. They draw on both technical and managerial skills to ensure projects meet technical specifications, economic targets, and regulatory requirements.
- Energy Data Expert / Digital Energy Analyst: Focusing on data-driven innovation in the energy sector. These professionals analyse large energy datasets and apply digital tools (such as AI and IoT platforms) to optimize energy systems and services. They might develop predictive analytics for energy demand and supply, manage energy data spaces, or create algorithms for trading and smart grid optimisation, thus improving decision-making and efficiency in operations.
- Digital Infrastructure Specialist (Smart Grids & IoT): Concentrating on the digital infrastructure of energy systems, graduates in this role design and maintain smart grid architectures, energy management systems, and IoT-based solutions. They ensure interoperability of devices and systems, oversee the implementation of energy automation standards (for example in smart homes or industrial microgrids), and address cybersecurity and data integrity in energy infrastructure.

- Energy Policy and Regulatory Analyst: Utilizing their knowledge of energy markets, policies, and regulatory frameworks, graduates in this role support organisations in navigating the regulatory landscape and complying with energy and environmental policies. They may work on analysing the impact of EU energy market regulations, emissions trading schemes, or incentives for renewables, and advise on strategic decisions to align business activities with current and future regulations. In public agencies or regulatory bodies, they contribute to developing and evaluating energy policies and market rules.
- Sustainability Consultant / Interdisciplinary Collaborator: Serving as advisors on sustainability and energy transition strategies, these graduates work closely with diverse stakeholders – from engineers to economists and policy-makers – to develop holistic solutions. They might conduct energy audits, craft decarbonization roadmaps for companies or municipalities, or design sustainability programmes that integrate technical innovations with economic feasibility and social acceptance. As interdisciplinary collaborators, they excel in bridging communication between technical and non-technical experts, ensuring that engineering solutions align with business models and sustainability goals.
- Research and Development Specialist: In research-focused roles, graduates pursue innovation in energy technologies and digital applications. Whether as doctoral researchers, R&D engineers, or innovation managers, they engage in activities such as developing new renewable energy technologies, enhancing energy storage and grid management solutions, or exploring cutting-edge topics like hydrogen energy, circular economy methods, or advanced energy informatics. They contribute scientific expertise and drive forward the knowledge frontiers in sustainable and digital energy solutions.

These roles illustrate the versatile career profile of programme graduates. Whether as implementors, project leaders, analysts, consultants, or innovators, alumni are unified by a focus on shaping the energy transition in an international, digitized context. They take on key positions in industry, government, and research to help guide companies, institutions, and society toward a sustainable and resilient energy future. Importantly, graduates are not confined to a single job title; rather, they possess a portfolio of competencies that allows them to adapt to various emerging roles in the evolving energy landscape.

Core Competencies and Skills Acquired

A graduate of the Master's programme Digital Energy Solutions emerges with a rich set of competencies spanning technical, digital, economic, regulatory, and social dimensions. Through the programme's interdisciplinary curriculum, students gain both specialized knowledge and the ability to integrate this knowledge across domains. Key competencies and skills acquired during the programme include:

- Technical and Domain-Specific Expertise: Graduates are able to analyse, design, and strategically develop modern energy systems in their entirety. They understand all facets of energy systems – including electricity generation (conventional and renewable), power transmission and distribution networks, and diverse forms of energy consumption in industrial, commercial, and residential contexts. They grasp how these technical components interact with energy markets, political frameworks, and regulations. With this systems perspective, graduates can conceptualize sustainable, secure, and efficient energy solutions and oversee their practical implementation. They are also well-versed in specific application areas such as energy use in industry and manufacturing, building energy technology and automation, and integration of electric mobility and energy storage solutions. This broad engineering foundation is built through courses in fundamentals of energy engineering, power generation technology, energy transmission/distribution, and energy use in buildings and industry, ensuring graduates can tackle technical challenges in diverse sectors.
- Digital and IT Skills: A defining feature of the programme is the strong focus on digitalisation in the energy sector. Graduates learn to select and apply digital technologies and data-driven

methods to develop innovative energy solutions. They are proficient in areas such as data analysis and energy informatics, being able to work with data spaces and large datasets to glean insights for energy management. They acquire knowledge of artificial intelligence (AI) techniques – including machine learning, time-series forecasting, and optimisation – and can deploy these in contexts like energy trading, smart grids operation, demand forecasting, and predictive maintenance for energy assets. Graduates are also familiar with IoT and automation in energy, including smart metering, home and building automation standards, and interoperability frameworks for integrating devices and systems. Additionally, they gain competencies in IT security and data privacy as it pertains to energy systems, understanding how to protect the energy infrastructure and its devices in an increasingly digitized energy landscape. Programming and software development skills (e.g. Python for data analysis and automation) are also part of the training, enabling graduates to prototype and implement software solutions for energy applications. Overall, graduates can bridge the gap between classical energy engineering and modern ICT, leveraging digital innovation to enhance sustainability and efficiency in energy systems.

- Economic, Business and Regulatory Acumen: The programme ensures that graduates understand the economic and regulatory context of energy systems, preparing them to incorporate these considerations into technical solutions. Students learn the fundamentals of energy economics – including energy markets, pricing mechanisms, and the economic drivers of energy supply and demand – through dedicated courses in energy economics and environmental economics. They study the structure of European and international energy markets, policies, and regulations, gaining insight into how laws and market rules (e.g. electricity market design, renewable energy directives, emissions trading systems) influence energy business models and technology deployment. This regulatory literacy enables graduates to ensure compliance and strategic alignment of projects with current policies and anticipate future regulatory trends. On the business side, graduates acquire knowledge in sustainability management and corporate strategy for the energy sector: they understand how companies evaluate investments like renewable projects or energy efficiency measures (including concepts of sustainable finance and cost accounting), and know how to develop business cases that are both economically and ecologically sound. They are also trained in innovation management and entrepreneurship relevant to the energy transition, equipping them to develop or assess new business models such as energy services companies, peer-to-peer energy trading platforms, or circular economy initiatives in the energy domain. By integrating technical solutions with economic feasibility and policy awareness, graduates can drive projects that are viable in the real world and advantageous for both organisations and society.
- Analytical and Research Skills: Graduates are methodologically adept, capable of tackling complex problems with scientific rigor and a solution-oriented mindset. They learn to model, simulate, and optimize energy processes and systems – for instance, using computational tools to simulate power systems behaviour, model energy flows in integrated systems, or optimize multi-criteria problems like cost vs. emissions. The curriculum (including courses in applied statistics and scientific methods) trains students to carry out data analysis, interpret statistical results, and derive evidence-based conclusions, which is critical for tasks such as forecasting energy consumption, analysing technology performance, optimizing/evolving existing systems, or evaluating policy impacts. Graduates are also equipped to critically assess research findings and translate them into practice. They gain experience in research methodology, literature review, and collaborative R&D projects, which hones their ability to stay at the forefront of technological and market developments. This analytical skill set, combined with a familiarity with state-of-the-art tools and frameworks, means graduates can not only understand existing solutions but also contribute to innovation by developing and testing new ideas for digital energy solutions.

- Interdisciplinary, Social, and Leadership Competence: Given the joint focus on technology, IT, and management, graduates excel at integrating methods and perspectives from multiple disciplines – engineering, economics, computer science, and sustainability management – and applying them purposefully in project settings. They are trained to view energy challenges from a holistic perspective, considering technical feasibility, economic viability, environmental impact, and social implications together. Cross-cutting knowledge gained in the programme enables them to contextualize broader developments such as climate change mitigation strategies, the globalization of energy markets, and the digital transformation of society, and to evaluate what these mean for businesses and communities. In terms of personal and professional attributes, graduates exhibit a high level of initiative, self-organisation, and decision-making ability. They are prepared to take responsibility for complex projects or strategic initiatives, being able to design, plan, implement, and oversee solutions with accountability for outcomes. The programme also emphasizes communication and teamwork skills in an international context: students frequently work in diverse, multicultural teams and are trained to communicate complex technical or regulatory content in an audience-appropriate manner. As a result, graduates can function effectively in global teams and can assume leadership and project management roles, facilitating collaboration among experts from different fields. They are invited to engage with ethical considerations, gender and diversity perspectives, and social responsibility, ensuring that the solutions they develop are not only innovative and profitable but also equitable and sustainable. This blend of soft skills and leadership capability means that alumni can guide interdisciplinary teams, negotiate between technical and managerial stakeholders, and be credible communicators in both scientific and business forums.

In summary, the competencies acquired through the Digital Energy Solutions programme equip graduates to be adaptable problem-solvers and innovators. They possess the technical know-how to develop cutting-edge energy technologies, the digital skills to leverage data and automation, the economic and regulatory insight to align projects with market realities and policy goals, and the interpersonal skills to lead and collaborate across disciplines. These capabilities directly reflect the programme's curriculum structure, which interweaves engineering modules (e.g. fundamentals of energy engineering, power generation, energy storage), IT modules (e.g. programming, statistics, AI in energy, IT security), business and policy modules (e.g. energy economics, sustainability management, energy markets and regulation), and project-based learning. By graduation, students have synthesized this knowledge into a coherent skill set, demonstrated through their thesis, enabling them to drive the energy transition forward in whatever role or sector they choose.

Unique Interdisciplinary and International Features of the Programme

The Master's programme Digital Energy Solutions is delivered as a joint degree by the Johannes Kepler University Linz (JKU) and the University of Applied Sciences Upper Austria (FH OÖ) – an outstanding collaboration that combines the complementary strengths of both institutions. This partnership is a defining element of the programme's profile. The FH OÖ contributes its hallmark practical orientation and close industry connections, ensuring that the education remains hands-on and aligned with current industrial needs. The JKU, on the other hand, brings in strong academic and research expertise, particularly in the areas of computer science, energy economics, energy policy, sustainability management, and regulatory affairs. Together, these strengths enrich the curriculum with all the essential dimensions required for strategically shaping modern energy systems on an international scale. In fulfilling this joint mission, the programme exemplifies the fusion of scientific excellence and practical relevance in an interdisciplinary context.

Students in the programme benefit from an interdisciplinary, multi-campus learning environment that provides access to a broad pool of expertise and a vibrant professional network. Courses are conducted across different campus locations (notably, the FH OÖ campus at

Hagenberg, known for information technology and digitalisation, and the campus Wels, known for engineering and energy technology, as well as the JKU in Linz), exposing students to varied academic cultures. This setup also introduces students to a diverse network of industry partners, research centres, and public-sector stakeholders, through joint projects, guest lectures, and internship opportunities. The strong involvement of external partners and real-world case studies throughout the programme underlines its practice-oriented approach and helps students build professional connections even before graduation. Importantly, the entire programme is taught in English and is explicitly aimed at an international audience. Students from different countries and backgrounds are welcome, making the classroom experience truly multicultural. This international focus means that intercultural communication, global perspectives and diverse viewpoints are an integral part of the training – graduates are comfortable working in international teams and considering global contexts in problem-solving. The cosmopolitan cohort and exposure to international best practices prepare graduates to work beyond national boundaries and understand energy issues in a global framework. Additionally, the curriculum's content often references international case studies, EU-wide strategies, and comparative approaches, further reinforcing the international and comparative dimension of the education.

The combination of a practice-oriented university of applied sciences and a research-driven university in one joint programme gives Digital Energy Solutions a unique profile in the academic landscape. It stands as a model of cooperative, cross-disciplinary education that aligns with both institutions' strategic goals of delivering impact for the economy, society, and the environment through advanced training. The programme's creation was motivated by industry and societal demand for graduates who can navigate the intertwined technological and managerial challenges of the energy transition – a need insufficiently addressed by existing programmes in Europe. By bridging disciplines and institutions, Digital Energy Solutions addresses this gap. Graduates carry with them not only the knowledge and skills outlined above, but also the ingrained ability to think across disciplinary boundaries and adapt to rapid changes – exactly the qualities needed to lead the sustainable transformation of international energy systems in the coming decades.

In conclusion, the qualification profile of the Master's programme in Digital Energy Solutions is characterized by its broad interdisciplinarity, international scope, practical orientation, and scientific rigor. Graduates emerge as professionals uniquely qualified to develop and implement innovative digital energy solutions, to collaborate effectively across engineering, IT, economics, and policy domains, and to assume leadership in guiding the energy sector toward a more sustainable and digital future. This profile makes them highly sought-after in a dynamic job market that spans traditional energy industries and new tech-driven ventures alike. The programme thus not only empowers its graduates with comprehensive competencies but also contributes to the wider goals of climate protection, energy security, and technological innovation by providing the human capital capable of shaping a resilient and sustainable energy future.

§ 2 Admissions

(1) In accordance with § 54 para. 1 UG the Master's programme in Digital Energy Solutions belongs to the category of "Interdisciplinary Studies" and is taught in English.

(2) For admission to the Master's programme in Digital Energy Solutions, applicants must hold either

1. a Bachelor's or Diploma degree from JKU in one of the following degree programmes:

- Artificial Intelligence
- Betriebswirtschaftslehre
- Chemistry and Chemical Technology
- Elektronik und Informationstechnik

- Informatik
- International Business Administration
- Maschinenbau
- Mechatronik
- Nachhaltige Kunststofftechnik und Kreislaufwirtschaft
- Naturwissenschaftliche Grundlagen der Technik
- Statistik und Data Science
- Technische Mathematik
- Technische Physik
- Wirtschaftsinformatik
- Wirtschaftswissenschaften

2. or a Bachelor's or Diploma degree from the FH OÖ in one of the following degree programmes:

- Artificial Intelligence Solutions
- Automotive Computing
- Design of Digital Products
- Hardware Software Design
- Kommunikation / Wissen / Medien
- Medientechnik und -Design
- Medizin und Bioinformatik
- Mobile Computing
- Sichere Informationssysteme
- Software Engineering
- Agrartechnologie und –management
- Angewandte Energietechnik
- Architektur
- Automatisierungstechnik
- Bauingenieurwesen im Hochbau
- Bio- und Umwelttechnik
- Electrical Engineering
- Entwicklungsingenieur Maschinenbau
- Innovations- und Produktmanagement
- Intelligente Produktionstechnik
- Leichtbau und Composite-Werkstoffe
- Mechatronik/Wirtschaft
- Sustainable Solutions
- Verfahrenstechnische Produktion
- Werkstoffwissenschaften und Fertigungstechnik.

(3) Admission based on the completion of another programme of at least the same level of higher education at a recognized national or international post-secondary institution requires that such a programme has conferred essentially the same qualification as one of the programmes listed in para. 2.

(4) In order to compensate for significant subject-related differences, supplementary examinations may be prescribed, which must be taken by the end of the second semester of the Master's programme.

(5) To complete the Master's programme in Digital Energy Solutions students must be enrolled at both institutions participating in the joint degree programme for the entire duration of the programme. A prerequisite for this is the successful completion of the admissions process at the FH OÖ.

§ 3 Structure and Outline

(1) The Master's programme in Digital Energy Solutions covers 4 semesters and consists of 120 ECTS credits.

(2) The distribution of ECTS credits across the individual study components and semesters is shown in the table below.

Ideal Course of Study Semesters

SE	Study field	Course title	ECTS	Type	JKU	FHOÖ
1. SE	Fundamentals of Engineering	Electrical Energy Engineering	3	IC		3
		Statistics for Energy Specialists	3	KV	3	
	IT Fundamentals	Introduction to Software Development with Python	3	VL	3	
		Introduction to Software Development with Python for Applications in Energy	3	UE	3	
		Introduction to IT Security	3	VL	3	
	Energy Economics	Principles in Energy and Environmental Economics	3	KV	3	
		The EU Energy System: Markets, Policies and Regulation	6	KV	6	
	Elective Courses	*individual choice of 3 ECTS from Electives list A*	3	tbd		3
		individual choice of 3 ECTS from Electives list B	3	tbd	3	
ECTS			30		24	6

SE	Study field	Course title	ECTS	Type	JKU	FHOÖ
2.SE	Principles of Energy Technology	Power Transmission and Distribution	3	IC		3
		Power Generation	6	IC		6
	Application of Energy Technology	Energy Services	6	IC		6
	IT in Energy	Processes and Process Modeling	3	KV		3
	Business Principles and Sustainability Management in the Energy Sector	Financial and Cost Accounting	3	KV	3	
		Financial Management	3	KV	3	
	Elective Courses	*individual choice of 3 ECTS from Electives list A*	3	tbd		3
		individual choice of 3 ECTS from Electives list B	3	tbd	3	
ECTS			30		9	21

SE	Study field	Course title	ECTS	Type	JKU	FHOÖ
3.SE	Application of Energy Technology	Energy Consumers	3	IC		3
		Energy Solutions in Industry	3	IC		3
	IT in Energy	Home and Building Automation	3	IC		3
		Data Space Principles	3	IC		3
		AI in Energy	3	IC		3
	Business Principles and Sustainability Management in the Energy Sector	Corporate Sustainability Management	3	KV	3	
		Sustainable Finance	3	KV	3	
	Scientific Competences	Scientific Working	3	KV	3	
	Elective Courses	*individual choice of 3 ECTS from Electives list A*	3	tbd		3
		individual choice of 3 ECTS from Electives list B	3	tbd	3	
ECTS			30		12	18

4. SE	Scientific Competences	Master's Thesis Colloquium and Master's Thesis Seminars	4	SE	4	
	Master's Thesis		23		23	
	Master's Exam		3		3	
ECTS			30		30	

tbd...	The type of course in Elective Courses depends on the selected subject	120	

(3) The study plan is designed for full-time study and is considered ideal in this regard. However, the programme is profession-enabling and, subject to organisational and curricular constraints, may also be pursued alongside professional employment or caregiving responsibilities.

§ 4 Compulsory Subjects/Modules

(1) The following compulsory subjects/modules have to be completed:

Code	Bezeichnung	ECTS
390DESOFOE26	Fundamentals of Engineering	6
390DESOITF26	IT Fundamentals	9
390ENEC26	Energy Economics	9
	Principles of Energy Technology	9
	Application of Energy Technology	12
	IT in Energy	12
390BSME26	Business Principles and Sustainability Management in the Energy Sector	12
390SCOM26	Scientific Competences	7

(2) If a course of the compulsory subjects has already been taken as course of the Bachelor's programme on which the admission to the Master's programme was based, an additional course with the corresponding amount of ECTS has to be taken from the subject Electives.

§ 5 Elective Subjects/Modules

(1) The following elective subject has to be completed:

Code	Bezeichnung	ECTS
390ELEC26	Electives	18

(2) Students must select only such courses that have not been completed in the Bachelor's programme on which the admission to the Master's programme was based. If, as a result of this provision, the options within one elective pool are exhausted, the courses required to make up the remaining ECTS credits must be selected form the other elective pool.

§ 6 Courses

(1) The names and the types of all courses of the subjects as well as their ECTS points, their duration in hours per week, their codes, their registration requirements, and their admission procedures (in case of limited availability of places) are described in the study handbook of JKU (studienhandbuch.jku.at). This applies even if the courses have to be taken at the FH OÖ. For each course, it is specified whether it must be completed at JKU or at the FH OÖ.

(2) The types of courses used and the examination regulations applicable to courses offered at JKU are set out in §§ 13 and 14 of the JKU statute (Section "Studienrecht"). For courses at the FH OÖ, the regulations in force there apply.

§ 7 Master's Thesis

(1) Within the Master's programme Digital Energy Solutions, a Master's Thesis shall be prepared in accordance with § 81 of the Austrian Universities Act (UG) and § 36 of the section of the Statutes on Study Law of JKU.

(2) The Master's Thesis shall be written in the form of a written academic paper and shall comprise 23 ECTS credits.

(3) The purpose of the Master's Thesis is to demonstrate, by means of an independent piece of academic work, that the student is capable of applying and/or deepening the knowledge acquired during the programme in the context of a specific research task. In particular, students shall demonstrate the ability to analyse issues and problem statements in the field of Energy Solutions, to identify potentials for improvement, to develop proposals for improvement, to assess alternatives, and to implement these solutions in an international context.

(4) The topic of the Master's Thesis must be substantively assigned to one of the following subjects/modules; interdisciplinary topics spanning multiple modules are permitted.
Subjects/modules:

- Applications of Energy Technology
- Business Principles and Sustainability Management in the Energy Sector
- Energy Economics
- Fundamentals of Engineering
- IT Fundamentals
- IT in Energy
- Principles of Energy Technology

(5) The topic of the Master's Thesis shall be designed in such a way that completion within a period of six months is feasible and reasonable.

(6) In parallel with the preparation of the Master's Thesis the course "KV Master's Thesis Colloquium and Master's Thesis Seminars" comprising 4 ECTS credits has to be completed.

§ 8 Examination Regulations

(1) The examination regulations for subject/module examinations and the assessment criteria for course examinations at JKU can be found in the study handbook of JKU. For examinations at the FH OÖ the regulations of this institution apply.

(2) The Master's programme Digital Energy Solutions is completed by a Master's Examination (3 ECTS). Admission to the Master's Examination requires the successful completion of the compulsory and elective subjects/modules according to §§ 4 and 5 and a positive assessment of the Master's Thesis and the course "Master's Thesis Colloquium und Master's Thesis Seminars".

(3) The Master's Examination is a comprehensive oral examination conducted by an examination board, which includes the following components:

1. presentation and defence of the Master's Thesis;
2. examination covering the subject or module from which the Master's Thesis topic was chosen;
3. examination covering the subject or module offered by the educational institution participating in the joint study programme other than the one offering the subject/module reffered to in no. 2, and which is most closely related to the Master's Thesis.

(4) The examination board consists of three persons and must comprise at least one examiner from JKU and at least one examiner from the FH OÖ. The supervisor of the Master's Thesis shall be appointed as examiner for the subject or module pursuant to para. 3 no. 2. The examiner for the subject or module pursuant to para. 3 no. 3 and the chair of the examination board shall be a representative of the partner institution at which the Master's Thesis was not written.

§ 9 Academic Degree

(1) Graduates of the Master's programme in Digital Energy Solutions are awarded the academic degree "Master of Science in Engineering", abbreviated "MSc".

(2) The certificate of award of the academic degree is issued in German with an English translation.

(3) The award certificate states that the Master's programme in Digital Energy Solutions is conducted as a joint study programme of the FH OÖ and JKU.

§ 10 Legal Validity

This curriculum comes into effect on October 1, 2026, subject to AQ Austria's approval of FH OÖ's accreditation application.