

# Master's Degree Programme ENERGY TECHNOLOGIES

Study track of the Master's degree programme in Energy and Transport Management

Climate change, resource scarcity and energy management are major concerns of the 21st century. To create a climate-resilient future for the next generations, we need to ensure sustainable and interdisciplinary energy solutions. Join us and become an agent of change in the field of energy management.

## Sustainable energy technologies.

You will gain a solid understanding of state-of-the-art energy technologies, system characteristics and boundary conditions with all the relevant trends and innovations to master a sustainable energy transition. In this specialisation you will discover a broad range of modern energy technologies: from renewable energy generation, grid planning, power-to-X technologies to industrial energy efficiency.

In our Energy Analytics and Solution Lab you will take a practical approach to issues of innovative energy generation, distribution and storage, with a particular focus on smart technologies and prosumerism. Virtual reality applications will not only enhance your insight into energy plants of the future, but also enable you to work in an interconnected and interdisciplinary way with our partner labs.

## Environmental management. Climate change and sustainability.

This obligatory module allows you to explore the key framework conditions and influencing factors for the future. You will immerse yourself into the mechanisms of climate change and its effects on the planet. You will gain deep insights into the areas of environmental reporting, big data simulations, but also in the field of management with applied case studies in strategic and sustainability management.

### FACTS



Master of Science in Engineering (MSc)



Work-friendly



4 semesters / 120 ECTS



FH JOANNEUM Kapfenberg



Language of instruction:  
English / German

- 25 student placements each year

- Head of Degree Programme:  
**DI Dr. Uwe Trattnig**

- Tuition fees: no fees for students from the EU, EEA and Switzerland

- All information about dates, requirements, application and admission is available online.

- [www.fh-joanneum.at/met](http://www.fh-joanneum.at/met)

### Electives. Highly relevant and up-to-date.

Our broad range of electives enables you to enhance your specialist knowledge in different, complimentary fields. You can choose courses amounting to a minimum of 34 ECTS credits in the fields of sustainable building management, autonomous driving technologies, environmental analytics, innovation and change management or international energy markets.

## Organisation

The course is organized in a work-friendly format allowing a part-time occupation: there are two weekdays of on-campus lectures, one evening/afternoon of online lectures and two blocked on-campus weeks during the semester.

## Career prospects

The future belongs to experts in the fields of energy, mobility and environmental management, who are able to tackle the consequences of climate change. Graduates of this Master's degree programme are highly skilled individuals with a strong focus on project

management and work in a variety of industries. Classical jobs include energy consultancy, project management for renewables or energy efficiency management.

*„Without this degree, I probably would not have my current job. Thanks to the work-friendly organization of my studies and the fact that I was able to complete my degree very swiftly, I now have several years of professional experience in my industry, even at an age of less than 30. I can recommend the programme to anyone with an interest in energy and climate protection.”*

Theresa Urbanz, Bsc MSc  
Project manager at Energie Agentur Steiermark

CURRICULUM: 120 ECTS (30 ECTS per semester)

1st semester	2nd semester	3rd semester	4th semester
Climate Change & Dynamics 4 ECTS	Advanced Harvard Case Studies in Sustainable Management 5 ECTS	Integrated Management Systems & Sustainability Reporting 4 ECTS	Seminar Master's Thesis 2 ECTS
Digital Modelling & Big Data Simulation 4 ECTS	Energy Analytics Laboratory I 5 ECTS	Energy Analytics Laboratory II 5 ECTS	Master's Thesis & Master's Exam 24 ECTS
Environmental Process Engineering 4 ECTS		Advanced Energy Technologies & Drive Engineering 3 ECTS	
Strategic Management – Cases in International Business (Success & Pitfall Studies) 4 ECTS	Applied Energy Grid Planning & Maintenance 4 ECTS	Environmental Chemistry & Emission Control 4 ECTS	
		International Aspects of Energy Law 3 ECTS	
Renewable Energy Generation 5 ECTS	Industrial Energy Efficiency 4 ECTS	International Aspects of Traffic Law 3 ECTS	
		Environmental System Aspects & Natural Resource Planning 4 ECTS	
Energy Networks & Hybrid Technologies 5 ECTS	Applied Environmental & Analytical Laboratory 4 ECTS	International Energy Markets & Trading 4 ECTS	
	Angewandtes Umwelt- und Anlagenrecht 4 ECTS	Nachhaltiges Gebäudemanagement 4 ECTS	Crisis Communication, Coaching-Skills & Organizational Development 4 ECTS
Storage & Power-to-X Technologies 4 ECTS	Automation & Control – Energy & Transport 4 ECTS	Public Transport Operation 3 ECTS	
	Big Data Security & Safety Aspects 4 ECTS	Traffic Safety Aspects (Infrastructure & Vehicle) 2 ECTS	Innovation & Change Management 4 ECTS
	International Project Development & Management 4 ECTS	Autonomous Driving Technologies & Impacts 3 ECTS	International Human Resource Management 4 ECTS
Obligatory for all Students	Specialisation in Energy Technologies	Elective Subjects (at least 34 ECTS)	