





# ELECTRICAL ENERGY & MOBILITY SYSTEMS

MASTER | WORK-FRIENDLY


 **Location:** Campus Villach  
Europastraße 4, 9524 Villach


 **Duration:** 4 semesters

 **Schedule:**  
Mon.-Fri., fulltime, partly on Saturdays

 **Academic Degree:**  
Master of Science in Engineering (MSc)

 **ECTS Credits:** 120

 **Language:** English

 **Study places per year:** 24



Electrical Energy & Mobility Systems is a Master's degree program in engineering focusing on research, design and implementation of modern electrical energy, e-mobility, battery technology and electrical drive systems. Electrical Energy & Mobility Systems graduates are able to understand, develop and modify complex technical systems in the fields of electric power train development, drive control, electrical machines, mobile power electronics, battery technology, power electronics, alternative energy systems and mobility concepts.

## COURSE INFORMATION

Students acquire detailed knowledge of electrical power and drive systems, power electronics, mobile energy storage, energy systems, automotive controls, mobility systems and automotive logistics. These qualifications allow graduates to take up leading positions in research and development in a variety of fields.

## SPECIALIST AREAS

The first semester, well combined with the Master degree programme Systems Design, is followed by two semesters of specialization on above mentioned topics. In the fourth semester the Master Thesis will be performed and written in topics of specialization technologies and professional depths based on the curriculum lectures in work and laboratory R&D activities completing the final examinations. After four semesters, students are awarded the Master of Science in Engineering, MSc.



# CURRICULUM

1 <sup>st</sup> Semester	SCH	ECTS
Electrochemistry	1,5	2,5
Electrical Engineering	1,5	2
Mechanical Engineering	1,5	2
Mathematical Methods and Modelling	3	4,5
Industrial Data Processing	1,5	2
Mechanical Dynamics	1,5	2
Thermodynamics	1,5	2
Fluid Dynamics	1,5	2,5
Control Systems	2,5	3,5
Control Systems Lab	2	3
Experimental Lab in Science Engineering	2,5	2,5
Academic Competence Skills	1,5	1,5
<b>Total</b>	<b>22</b>	<b>30</b>

2 <sup>nd</sup> Semester	SCH	ECTS
Battery Technologies	1,5	2
Storage Systems	1,5	2
Battery Lab	1,5	3
Advanced Electrical Engineering	3	4
Power Electronic Systems	2	3
Non-Renewable Energy Systems	1,5	2
Renewable Energy Systems	1,5	2
Alternative Concepts	2	3
Power Train and Traction	2,5	4
Electrical Machines	2	3
Specialisation Lab in Science Engineering	2	2
<b>Total</b>	<b>21</b>	<b>30</b>

3 <sup>rd</sup> Semester	SCH	ECTS
Motion Control	1	2
Electrical Drive and Drive Control	2	2
Power Train Simulation	2	3,5
Geoinformation Systems	1	1,5
Mobile Information Systems	2,5	3,5
Automotive Safety	1,5	2,5
Electrical Grids and Distribution	2	3
Measurement and Monitoring	1,5	2,5
Energy Automation	1,5	2
GUI and Usability	1,5	2
Mobility Concepts	2	3
Mobility Concepts Lab	1,5	2,5
<b>Total</b>	<b>20</b>	<b>30</b>

4 <sup>th</sup> Semester	SCH	ECTS
Master Thesis	0	25
Master Thesis – Seminar	2	2
Master Exam	3	3
<b>Total</b>	<b>5</b>	<b>30</b>
<b>Total Sum</b>	<b>68</b>	<b>120</b>

SCH = Semester Credit Hour

ECTS = European Credit Transfer System



## 📅 DATES

Start: October 2022

**Study Info Lounge:** always on the second Tuesday of the month from 2 p.m. to 6 p.m. - ONLINE

**FH Days and information events:**  
all dates at [www.fh-kaernten.at/fhday](http://www.fh-kaernten.at/fhday)

## € COSTS

Tuition fee: € 363,36 per semester

Student Union Fee: around € 20, annual adjustment

## ✉ CONTACT

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