

Master's degree programme

ELECTRONICS AND COMPUTER ENGINEERING

Engineering expertise at the highest level: this Master's degree programme will make you an expert in tomorrow's computer-based electronic systems. The focus is on highly efficient power electronics, green mobility and autonomous driving and will provide you with the best opportunities for your future career.

What you will study:

Electronic systems.

You examine how embedded systems function and learn how to combine hardware and software to develop easy-to-use systems. You also delve into digital signal processing, sensor technology, digital communications and control systems. From the third semester you can specialise in Power Electronics or Automotive Control.

Power electronics.

In the Power Electronics specialisation you focus on the use of state-of-the-art power electronics in electric mobility and in renewable energy. You examine the development of efficient components and their use in resource-conserving systems.

Automotive control.

In the Automotive Control specialisation you focus on embedded software in the application areas of autonomous vehicle control systems and advanced testing techniques. Applications in automotive electronics such as driver assistance systems and traction control are key here.

Applied research.

You take an active part in innovative technology projects through cooperation with universities and companies at a national and international level. In addition you extend your in-depth knowledge in your Master's thesis.

FACTS



Master of Science in Engineering (MSc)



Work-friendly



4 semesters / 120 ECTS



FH JOANNEUM Kapfenberg



Language of instruction: English

- 20 places per year
- Head of Degree Programme
FH-Prof. Priv.-Doz. DI Dr. Christian Vogel
- Tuition fees: no tuition fees for students from the EU, EEA and Switzerland
- All information about deadlines, requirements, application and admission can be found online.
- www.fh-joanneum.at/ecm

Did you know ...

... that, during your course, you can explore and develop the power electronics of tomorrow at the JOANNEUM Power Electronics Center?



Organisation

The work-friendly organisation of the programme means that modules are taught in blocks to allow you to work part-time. From the first to third semesters classes generally take place from Wednesday to Friday. There are three blocks of classes in the fourth semester. During the remainder of the time you devote yourself to your Master's thesis.

"I have chosen the Master's degree programme in Electronics and Computer Engineering because I am fascinated by digital technologies. I enjoy solving challenging problems in the fields of electronics and informatics and finding solutions for the future. This course opens up a wide range of excellent career opportunities."

Ing. Elisabeth Schreck, BSc, Student

CURRICULUM: 120 ECTS (30 ECTS per semesters)

1st semester	Type	SWS	ECTS
Analog Circuit Design	ILV	2	3
Digital Circuit Design	ILV	4	6
Electronic Packaging	ILV	2	4
Power Electronics Laboratory	LB	1	2
Microcontroller Architecture & Programming	ILV	4	6
Intercultural Communication	SE	1	1.5
Presentations & Meetings	SE	1	1.5
Mathematical Methods in Electronics	ILV	4	6
		19	30

3rd semester	Type	SWS	ECTS
Communication Systems & Protocols	ILV	3	5
Project 1	SE	3	13
Project Management	SE	1	2
Field Power Electronics			
Power Electronic Circuits	ILV	2	4
Power Electronic Components	ILV	2	3
Renewable Energy and Electric Mobility	ILV	2	3
Field Automotive Control			
Advanced Driver Assistance Systems	ILV	2	3
Automotive Control Units	ILV	2	4
Instrumentation and Test Systems	ILV	2	3
		13	30

Career prospects

A range of exciting and well-paid jobs are open to our graduates thanks to the diverse potential uses of electronic components, systems and the associated software. They work as application engineers in industrial research and product development. Specialising in embedded systems you are valued in the automotive and semiconductor industry, in telecommunications and in automation engineering and medical technology. You can also pursue your studies further by taking a doctoral degree.

2nd semester	Type	SWS	ECTS
Data Structures & Algorithms	ILV	2	4
Realtime Computing	ILV	3	5
Electromagnetic Systems	ILV	3	4
Scientific Working	SE	1	2
Digital Control Systems	ILV	3	5
Digital Signal Processing	ILV	3	5
Model-Based Software Development	ILV	3	5
		18	30

4th semester	Type	SWS	ECTS
Innovation Management	VO	1	1,5
International Technology Management	ILV	2	3,5
Master's Thesis Seminar	SE	2	4
Master's Thesis	MA	0	21
		5	30

ILV = Integrated course, LB = Laboratory, SE = Seminar, SWS = Hours per week, ECTS = European Credit Transfer and Accumulation System