



PADERBORN
UNIVERSITY



MASTER PROGRAM

ELECTRICAL SYSTEMS ENGINEERING



10 REASONS FOR CHOOSING PADERBORN UNIVERSITY

1. Professional – We are not only interested in ensuring you successfully complete your degree: Finding a good job is just as important. Our network of companies in the region and beyond will provide you with opportunities during and after your studies.

2. Affordable – There are no tuition fees in Germany, even for international students. It is a state-funded system that offers a very good standard of higher education. Although a degree is easy on your finances, it is not easy on your brain: you will need to study hard!


3. Compact – A campus university means that you will find everything you need (library, housing, cafeteria, shopping, entertainment) within walking distance.

4. Safe – No one gets lost in Paderborn: this is a very safe and tolerant city. You do not need to worry about walking alone at any time of the day or night. Most people, especially young ones, can converse in English and are happy to help you.

5. Supportive – You're given plenty of personalized support, starting with your application here. Every student's situation is unique and we try to find answers for everyone.

6. Personal – You are never an anonymous student here. There are counsellors in the faculties and in the International Office who are on hand to help you in any way you need. Additionally, international student organizations provide study support as well as social events.

7. Communicative – International students are invited to attend our special German language courses. For our English language Master degree programs



you do not need to speak German. However, a little knowledge of German will help making your stay here more comfortable.

8. Comfortable – Paderborn offers high quality student housing at reasonable prices. The International Office supports you in finding a place to live that meets your needs.

9. Practical – The companies located in and around Paderborn offer numerous opportunities for internships as well as practical subjects for a thesis. We will help you gain your first job experience during your studies.

10. Fair – All students have equal opportunities at Paderborn University. Students are expected to be independent and to manage their own course of study. You will easily receive the support you need if you come prepared and motivated.

WHY STUDY

ELECTRICAL SYSTEMS ENGINEERING?

Being in the final phase of your Bachelor program in electrical engineering or a related field, or after working successfully in industry for some years, why not go a step further and pursue a Master degree? We invite you to take advantage of a program which builds upon your previous education and experiences, and provides the skills you need to become a highly qualified electrical engineer in the global economy.

The Master program in Electrical Systems Engineering focuses on electrical systems at an advanced level. The program deals with the analysis, construction and evaluation of electrical systems in hardware and software. It delivers a solid background in theories and methods for the design of electrical systems. Our academics carry out interesting research in diverse areas; have look at our webpages! Being our student gives you insights into current trends and developments, in addition to ample opportunities for practical experience.

ENTRY

REQUIREMENTS

- **Excellent Bachelor degree in Electrical Engineering or a related field**
- **GRE – Revised General Test**
- **English language skills**
(no knowledge of German required)

KEY DATA

- **2 year (full-time) Master program**
- **Specialization in either Signal & Information Processing or Electronics & Devices**
- **Program language: English**
- **No tuition fees**
- **2 Application deadlines:**
Winter Semester (May 30) and Summer Semester (November 30)
- **2 Starting dates:**
Winter Semester (early October) and Summer Semester (early April)



COURSE CONTENTS AT A GLANCE

The Electrical Systems Engineering (ESE) program offers two specializations:

- **Signal & Information Processing**
- **Electronics & Devices**

Depending on your choice, the curricula of the first three semesters differ. The fourth semester is entirely reserved for the Master Thesis project. The latter is often carried out in conjunction with a company internship.

Specialization: Signal & Information Processing

Semester	1	2	3	4		
	INTRODUCTION TO ESE <i>Compulsory subject</i> Advanced System Theory	INTRODUCTION TO ESE <i>Compulsory subject</i> Modeling & Simulation	INTRODUCTION TO SIGNAL & INFORMATION PROCESSING <i>Compulsory subject</i> S&IP Statistical Signal Processing	FUNDAMENTALS OF ESE <i>Compulsory elective</i>	MANAGEMENT AND APPLICATION <i>Compulsory subject</i> Management of Technical Projects	GENERAL STUDIES <i>Elective</i> Language Course German or Other
	INTRODUCTION TO SIGNAL & INFORMATION PROCESSING <i>Compulsory subject</i> S&IP Statistical and Machine Learning	SIGNAL & INFORMATION PROCESSING <i>Compulsory elective</i>	FUNDAMENTALS OF ESE <i>Compulsory elective</i>		PROJECTS* <i>Elective</i> Analysis/Design	GENERAL STUDIES <i>Elective</i> Language Course German or Other
	SIGNAL & INFORMATION PROCESSING <i>Compulsory elective</i>	ELECTRICAL SYSTEMS ENGINEERING <i>Elective</i>	ELECTRICAL SYSTEMS ENGINEERING <i>Elective</i>		PROJECTS* <i>Elective</i> Realization/Test	MANAGEMENT AND APPLICATION <i>Compulsory seminar</i> Topics in Systems Engineering
	MASTER THESIS					

* can be divided into two half-year projects

CAREER PERSPECTIVES

Being more practically oriented than a purely scientific Master degree, yet retaining much of the academic rigour, successful graduates of the program will be well prepared, and highly sought-after, in the job market. Areas of opportunity include the electrical, electronics, automotive, and aviation industries, as well as IT, telecommunications, automation and energy engineering. Interdisciplinary areas of mechanical engineering, vehicle and traffic engineering,

and medical technology also have demand for electrical engineering graduates.

Graduates with excellent grades, who wish to continue their studies after the Master program, are perfectly placed to do so. Paderborn University is well-established as a centre of research, and progression to study for a PhD within one of the many exciting and internationally active research groups is very smooth for good graduates.

Specialization: Electronics & Devices

Semester	1	2	3	4		
	INTRODUCTION TO ESE <i>Compulsory subject</i> Advanced System Theory	INTRODUCTION TO ESE <i>Compulsory subject</i> Modeling & Simulation	INTRODUCTION TO ELECTRONICS & DEVICES <i>Compulsory subject</i> E&D Circuit & System Design	FUNDAMENTALS OF ESE <i>Compulsory elective</i>	MANAGEMENT AND APPLICATION <i>Compulsory subject</i> Management of Technical Projects	GENERAL STUDIES <i>Elective</i> Language Course German or Other
	INTRODUCTION TO ELECTRONICS & DEVICES <i>Compulsory subject</i> E&D Fields & Waves	ELECTRONICS & DEVICES <i>Compulsory elective</i>	FUNDAMENTALS OF ESE <i>Compulsory elective</i>		PROJECTS* <i>Elective</i> Analysis/Design	GENERAL STUDIES <i>Elective</i> Language Course German or Other
	ELECTRONICS & DEVICES <i>Compulsory elective</i>	ELECTRICAL SYSTEMS ENGINEERING <i>Elective</i>	ELECTRICAL SYSTEMS ENGINEERING <i>Elective</i>		PROJECTS* <i>Elective</i> Realization/Test	MANAGEMENT AND APPLICATION <i>Compulsory seminar</i> Topics in Systems Engineering
	MASTER THESIS					

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THE CITY OF PADERBORN

Paderborn is a dynamic city of about 150,000 inhabitants that charms visitors with its friendly green environment. Unique is its combination of tradition and modernity: high-tech companies stand alongside medieval churches. The world's largest computer museum and the seat of Charlemagne from 777 A.D. are both located in this peaceful town. Paderborn is built around its cathedral and park, which contains multiple bubbling sources of the Pader, Germany's shortest river.

The quality of life is very high in Paderborn. There are ample opportunities for outdoor and indoor sports, several parks and lakes, and traditional as well as modern festivals and events. 22,000 students ensure the city has a lively cultural scene. In comparison to many other German cities, Paderborn remains affordable and has sufficient student and guest housing. Paderborn has big-city facilities, but on a small-town scale. It is personal and inviting.

Paderborn is one of the few cities in Germany with a young and growing demographic. It has excellent schools, a strong



start-up culture and is home to global high-tech companies, including many family-run businesses in the engineering, steel, automotive, electrical appliances, IT, health care, textile, and food industries. Among the most renowned businesses in Paderborn and surroundings are Phoenix Contact, Atos, Miele, Wincor Nixdorf, Benteler, Hella, dSPACE, Claas, Beckhoff, and Stute. Many a student has found employment in these companies after an internship or research project.





FURTHER INFORMATION

STUDENT ADVISORY SERVICE

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E-Mail: ms-ese@upb.de

www.ei.uni-paderborn.de/ms-ese

PROGRAM MANAGEMENT

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INTERNATIONAL OFFICE OF PADERBORN UNIVERSITY

[www.uni-paderborn.de/en/
studium/international-office](http://www.uni-paderborn.de/en/studium/international-office)



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