FERIT

FACULTY OF ELECTRICAL ENGINEERING,
COMPUTER SCIENCE AND INFORMATION
TECHNOLOGY **OSIJEK**

Dean's foreword

The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek is a modern faculty that has constantly been developing in all areas of its expertise. The educational process consists of three levels with study programmes being continually upgraded and harmonised with recent scientific discoveries and economy needs.

Scientific research is essential for the development of the Faculty. The Faculty actively participates in numerous domestic and international consortia used by the Faculty's established research groups for conducting successful scientific research. The Faculty's research groups have participated in numerous domestic and European projects as either heads or associates.

Cooperation with the economy, encouragement of entrepreneurship and transfer of knowledge and technologies are fundamental indicators of the Faculty's development. The Faculty successfully cooperates with the most important companies in the fields of electrical engineering, computer engineering and information and communication technologies. Cooperation with the economy has been supported by professional and development projects and research studies. Furthermore, doing their practical work, bachelor and master theses, students have gradually been prepared for the job market and solving real engineering problems.

Undoubtedly, powerful faculties and universities are imperatives for the society's development. Information and communication technology, electrical and computer engineering providing additional values for new products and services represent strategic priorities for the development of modern economies. Hence, the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek continues to successfully fulfil its mission – provision of support for knowledge and technology-based economy.

Dean

Dr Drago Žagar, Full Professor

FERIT

FACULTY OF ELECTRICAL ENGINEERING, COMPUTER SCIENCE AND INFORMATION TECHNOLOGY **OSIJEK**

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Full Professor

Vice-Dean for International Cooperation

- Department of Core Courses (ZZP)
- Department of Power Engineering (ZEE)
- Department of Electromechanical Engineering (ZES)
- Department of Communications (ZAKOM)
- Department of Software Engineering (ZPI)
- Department of Computer Engineering and Automation (ZRIA)

Welcome to Croatia

The Republic of Croatia is geographically located between Central and Eastern Europe. It covers the geographical area that extends from the spacious Pannonian Plain across a narrow area of the Dinaric Alps to the Adriatic coast - one of the most indented coastlines in the world. The interior of the country has a moderate continental climate, whereas a pleasant Mediterranean climate prevails along the Adriatic coast.

Slavonia and Baranja

Slavonia and Baranja is a historical region in eastern Croatia. It is surrounded by three rivers; the Sava River (the border with Bosnia and Herzegovina), the Drava River (the border with Hungary) and the Danube (the border with Serbia), forming an area of exceptional beauty with forests, meadows and hills. In Slavonia, there are numerous castles and villas that once belonged to rich families, but now they add a special charm to this part of Croatia. Baranja stretches between the Drava River in the north and the Danube in the east. At the point where the Danube and the Drava River meet, nature has created a remarkable phenomenon - Kopački Rit Nature Park, which is rich in flora and fauna. In 1967, Kopački Rit and its immediate area were declared a nature park and a zoological reserve, respectively.

The largest city in Slavonia, Osijek, which is located on the Drava River, is an interesting tourist destination with numerous parks, cultural monuments and entertainment possibilities.

Osijek

Osijek is the fourth largest city with about 110,000 inhabitants. It is located in a valley on the right bank of the Drava River. It consists of the Fortress – a baroque city-fortress built in the 18th century, the Upper, the Lower and the New Town, Retfala and the Industrial District. Osijek is the most verdant city in the Republic of Croatia.

The 18th century baroque city-fortress of Osijek was built by transforming the then historic city located at the strategic crossing over the Drava River. The first new city-fortress was built within a large strategic system of fortified baroque towns on the border with the Ottoman Empire, which was founded by Prince Eugene of Savoy who began to build it in 1712. The fortress had four gates: The New Gate (south), the Water Gate (north), the Imperial Gate (east) and Valpovo Gate (west). Out of these four gates to the fortress, only one is still present today – the Water Gate, where there is a memorial plaque dedicated to the builder of Osijek fortress, general Stephan von Beckers. It is believed that his body was walled up in the outer wall or rampart.

www.osijek.hr

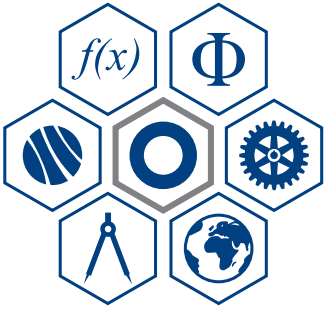
Josip Juraj Strossmayer University of Osijek

Josip Juraj Strossmayer University was established in 1975. It consists of 17 constituent units, i.e., 11 faculties, 5 University departments, 1 Academy of Arts and 3 university infrastructure institutions, i.e., the City and University Library in Osijek, the Student Centre in Osijek and the Student Centre in Slavonski Brod, as well as the Technology Development Centre Osijek Ltd. Today, Josip Juraj Strossmayer University of Osijek has about 1,500 employees and 18,000 students with 1,800 students studying at the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek. Each year, the number of incoming students doing their practical training and scientists conducting research has been increasing in both the University and the FERIT.

Josip Juraj Strossmayer

Josip Juraj Strossmayer (Osijek, 4 February 1815 - Đakovo, 8 April 1905) was a Croatian bishop, theologian, politician, cultural worker (founder of the central Croatian scientific and cultural institutions), writer and one of the most important and influential figures in the 19th century Croatia.

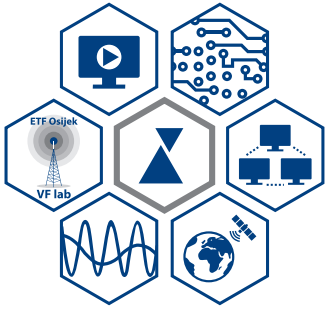
DEPARTMENTS AT THE FERIT OSIJEK



DEPARTMENT OF CORE COURSES

Chair of Mathematics, Physics and Mechanical Engineering

Chair of Social sciences and Humanities



DEPARTMENT OF COMMUNICATIONS

Chair of Radiocommunications and Telecommunications

Chair of Electronics and Microelectronics

Chair of Multimedia Systems and Digital Television

Laboratory for High Frequency Measurements

DEPARTMENT OF SOFTWARE ENGINEERING

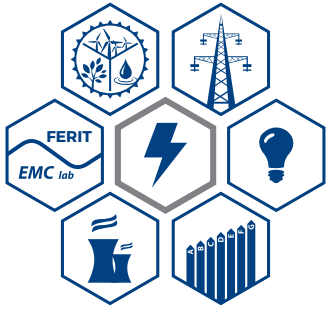
Chair of Visual Computing

Chair of Programming Languages and Systems

DEPARTMENT OF COMPUTER ENGINEERING AND AUTOMATION

Chair of Automation and Robotics

Chair of Computer Engineering



DEPARTMENT OF POWER ENGINEERING

Chair of Power Systems and Substations

Chair of Power Plants and Energy Processes

Electromagnetic Compatibility Laboratory

DEPARTMENT OF ELECTROMECHANICAL ENGINEERING

Chair of Fundamentals of Electrical Engineering and Measurements

Chair of Electric Machines and Power Electronics

Electric Machines and Hybrid Electric Drives Laboratory

FERIT OSIJEK

The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek is a higher education, scientific and research institution that conducts scientific, research, development and educational projects and performs undergraduate, graduate, postgraduate and professional study programmes in technical sciences.

Higher education curriculum in electrical engineering was first established in Osijek in 1978 as the third study of the kind in the Republic of Croatia. The establishment of the Study of Electromechanical Engineering resulted from an initiative of the University of Osijek and took place in 1977 and 1978. It was supported by the economy of the city of Osijek and surrounding municipalities in the Slavonia and Baranja region.

In 1993, the Faculty of Electrical Engineering Osijek (ETFOS) was founded as a public institution of higher education. Today, it is organised in six departments with a total of thirteen chairs and two accredited laboratories.

The strong development of the Faculty of Electrical Engineering in Osijek, the pursuit of new scientific achievements, the improvement of teaching processes and the expansion of cooperation with economic entities, led to the idea of renaming the Faculty and a stronger positioning and branding of a new entity. On the 8th of May 2016, the Faculty was renamed.

FERIT
FACULTY OF ELECTRICAL ENGINEERING, COMPUTER SCIENCE AND INFORMATION TECHNOLOGY OSIJEK

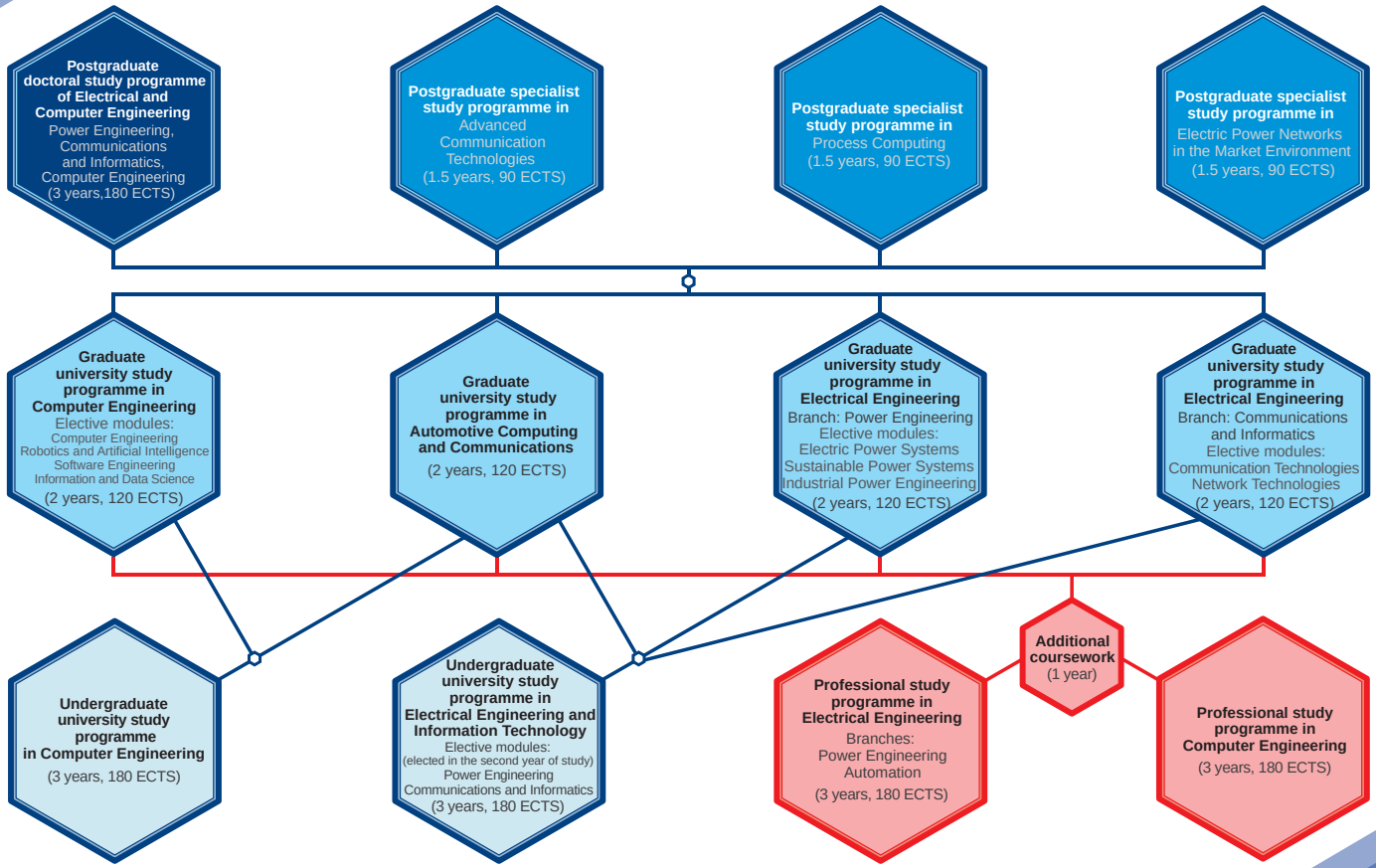
The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek is a driving force in the field of higher education, innovation and development of new technologies in the City, County, as well as in the wider regional area. Changing the name of the Faculty, besides power engineering, within electrical engineering and computer science, the branches of information systems and telecommunications and informatics were additionally emphasized.

They are the common denominator of information technologies, whose purpose is the development, maintenance and use of computer systems, software and communication networks for data processing and distribution. To increase the visibility of the Faculty's field of activity in the academic and business environment, computer science and information technology are highlighted in the new name, along with electrical engineering.

Through its university and professional study programmes, the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek has been educating and training its staff to be able to keep up with technology advances in the areas of electrical and computer engineering as well as to apply their knowledge to engineering problem solving and, through direct cooperation with industry, to transfer knowledge of new technologies based on new scientific findings. The study programmes are in line with European and global trends, but also adapted to the needs of the economy in the environment. FERIT Osijek is also a regional scientific and research centre of excellence in the areas of electrical and computer engineering.

STUDY PROGRAMMES

FERIT Osijek implements study programmes in the scientific fields of electrical and computer engineering. Currently, ten study programmes are being delivered, i.e., two undergraduate university study programmes (in electrical engineering and computer engineering), three graduate university study programmes (in electrical engineering, computer engineering, automotive computing and communications), one postgraduate doctoral study programme, three postgraduate specialist study programmes and one professional study programme.

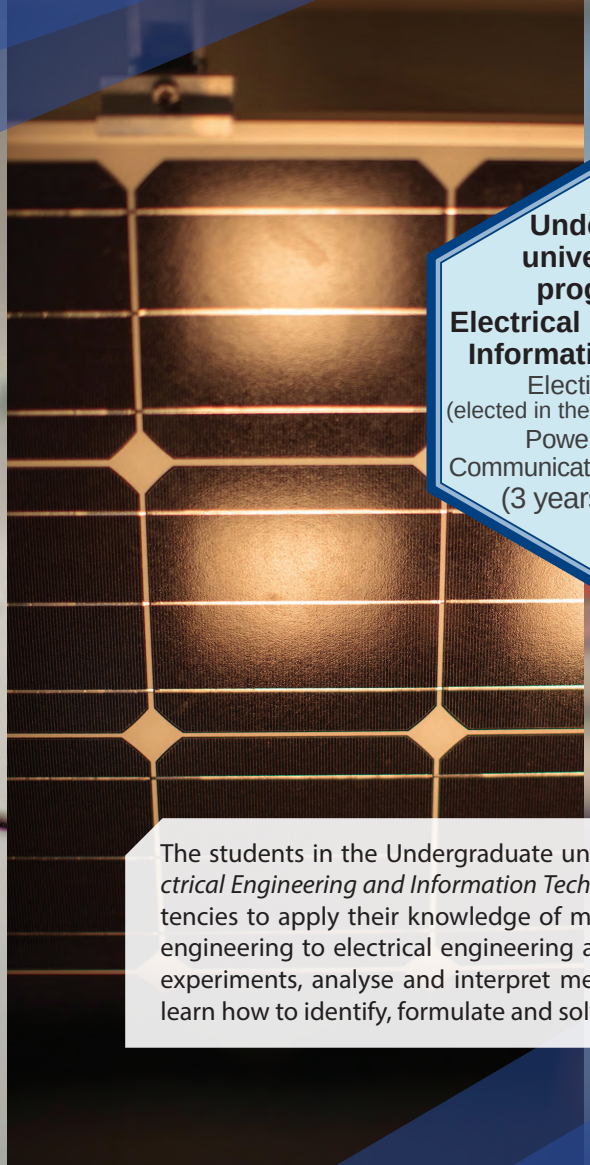


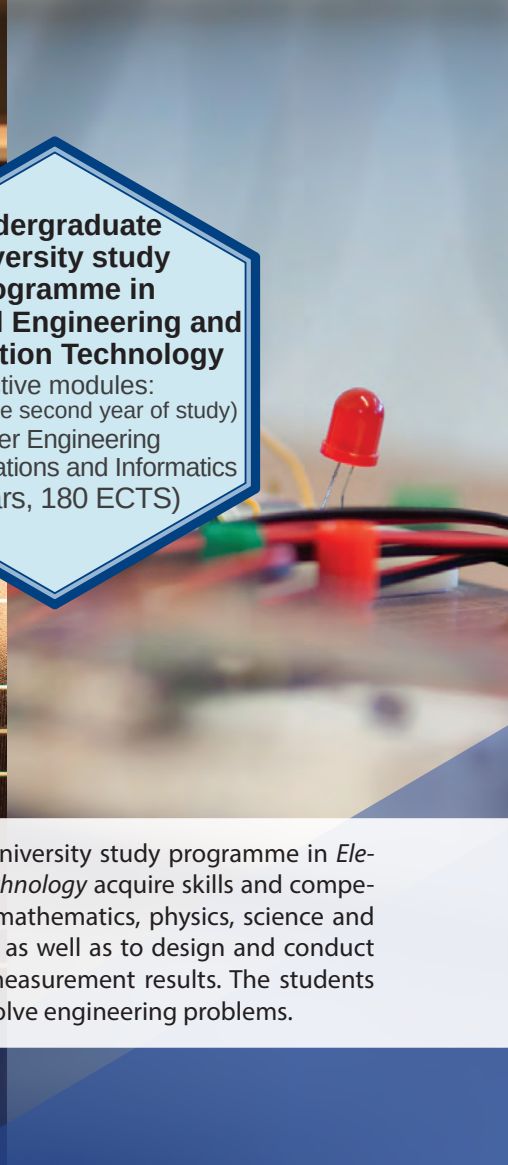
STUDY PROGRAMMES AT THE FERIT OSIJEK

Undergraduate university study programme in Computer Engineering

(3 years, 180 ECTS)

Within the framework of the Undergraduate university study programme in *Computer Engineering*, the students are educated and trained to work in a very dynamic area of technological development. These students are taught how to identify, formulate, and solve engineering problems by using various computer tools and systems.





Undergraduate university study programme in Electrical Engineering and Information Technology

Elective modules:
(elected in the second year of study)
Power Engineering
Communications and Informatics
(3 years, 180 ECTS)

The students in the Undergraduate university study programme in *Electrical Engineering and Information Technology* acquire skills and competencies to apply their knowledge of mathematics, physics, science and engineering to electrical engineering as well as to design and conduct experiments, analyse and interpret measurement results. The students learn how to identify, formulate and solve engineering problems.

Professional study programme in Electrical Engineering

Branches:
Power Engineering
Automation

(3 years, 180 ECTS)

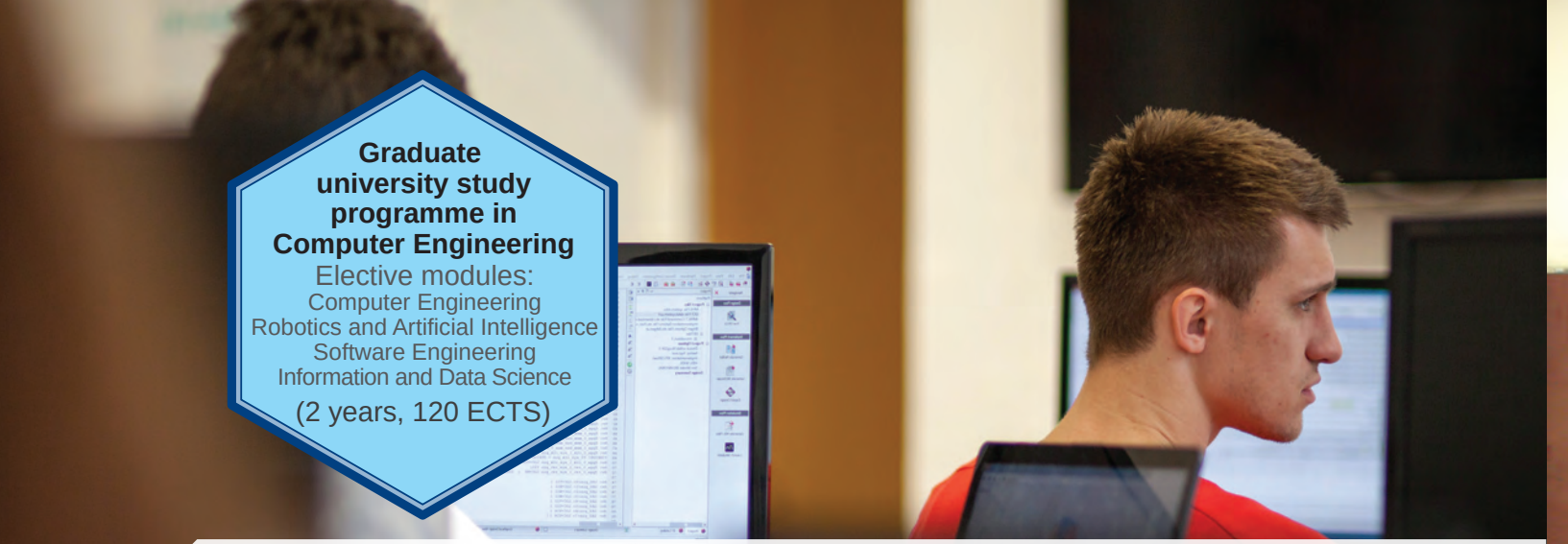
The students in the professional study programme branch **Power Engineering** acquire knowledge and skills to design, test and maintain electrical installations at all levels of complexity, transmission and distribution networks and lines, switching substations, city substations, distribution overhead and underground networks, facilities and plants of flexible production systems, automated electromotive plants, etc.

The students in the professional study programme branch **Automation** acquire knowledge and skills to design, implement, test and maintain automated technological, power and transport plants and processes, etc.

Professional study programme in Computer Engineering

(3 years, 180 ECTS)

Upon completion of the undergraduate professional study programme in **Computer Engineering**, students acquire knowledge and skills to apply their knowledge of mathematics, physics, computing and engineering to computer engineering and related fields. Such theoretical foundation enables students to understand and adopt new techniques and technological changes, which lays a firm foundation for lifelong learning. Since they learn about different standards and regulations, students are trained to design and maintain computer and programming systems as well as to write relevant documentation.



Graduate university study programme in Computer Engineering

Elective modules:

Computer Engineering
Robotics and Artificial Intelligence
Software Engineering
Information and Data Science

(2 years, 120 ECTS)

The graduate study programme in *Computer Engineering* at the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek allows the students the opportunity to become qualified in various aspects of process computing and other scientific areas. Upon graduation, the students will be able to:

- plan, design, and discover hardware and software solutions for computing systems in economy, industry, business and other applications in companies;
- develop hardware and software solutions;
- participate in interdisciplinary efforts, either independent or as a member of a team in creative or systematic solving of complex engineering problems in the area of computing or programming;
- operate laboratory research;
- plan and optimise contemporary hardware and software solutions.

Furthermore, the students will acquire additional competencies depending on the courses of the elective module (Computer Engineering, Robotics and Artificial Intelligence, Software Engineering and Information and Data Science).

The graduates in this branch acquire knowledge and competencies and upon completion they will be able to:

- design power plants and systems (electric power plants and cogeneration power plants);
- design and maintain electrical machines;
- design and maintain transmission and distribution networks and lines, switching substations, city substations, distribution overhead and underground networks;
- design and maintain power systems.

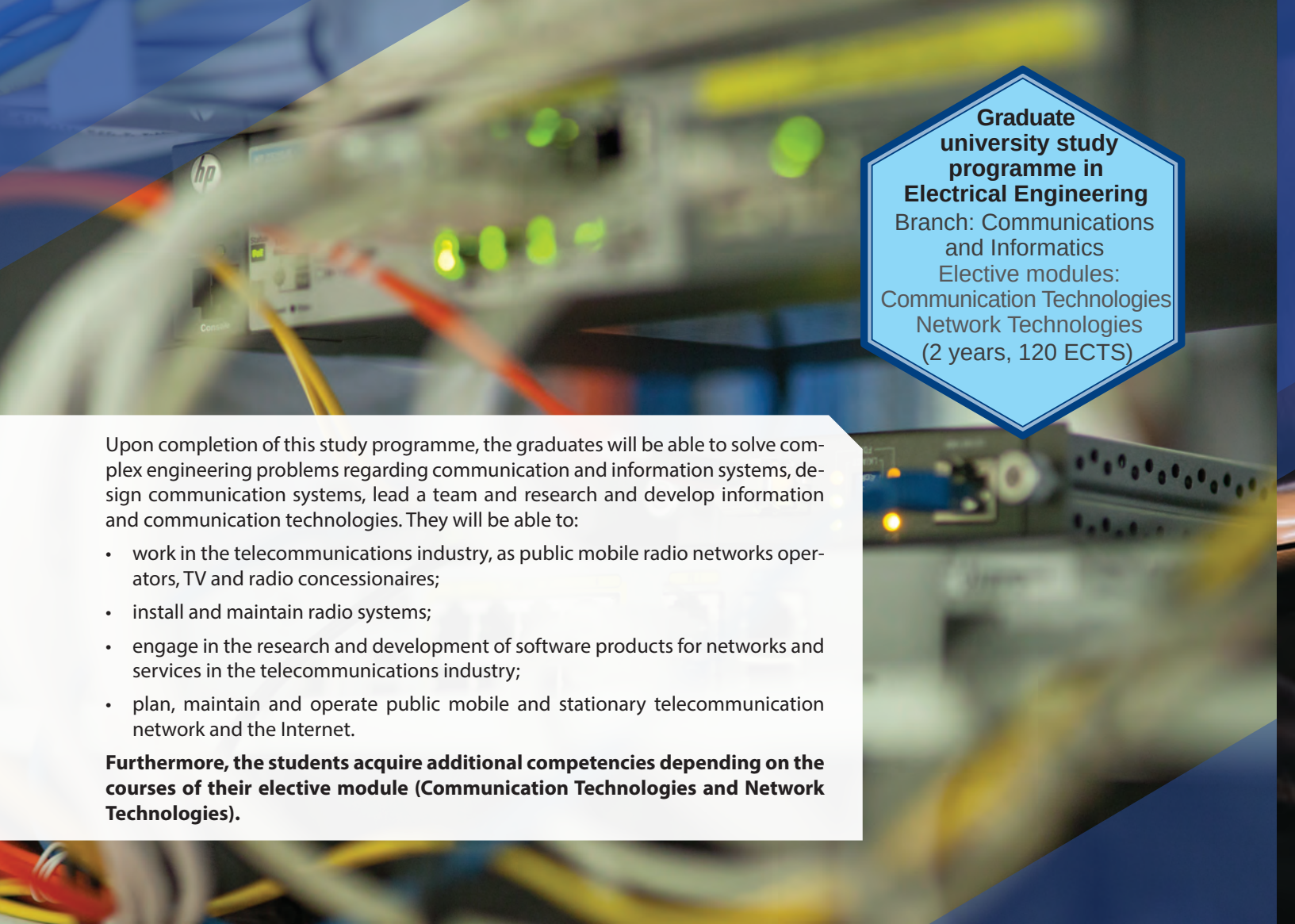
Furthermore, the graduates will acquire additional competencies depending on the courses in the elective module (Power Systems, Sustainable Power Systems, Industrial Power Engineering).

Graduate university study programme in Electrical Engineering

Branch: Power Engineering

Elective modules:
Electric Power Systems
Sustainable Power Systems
Industrial Power Engineering

(2 years, 120 ECTS)



Graduate university study programme in Electrical Engineering

Branch: Communications and Informatics

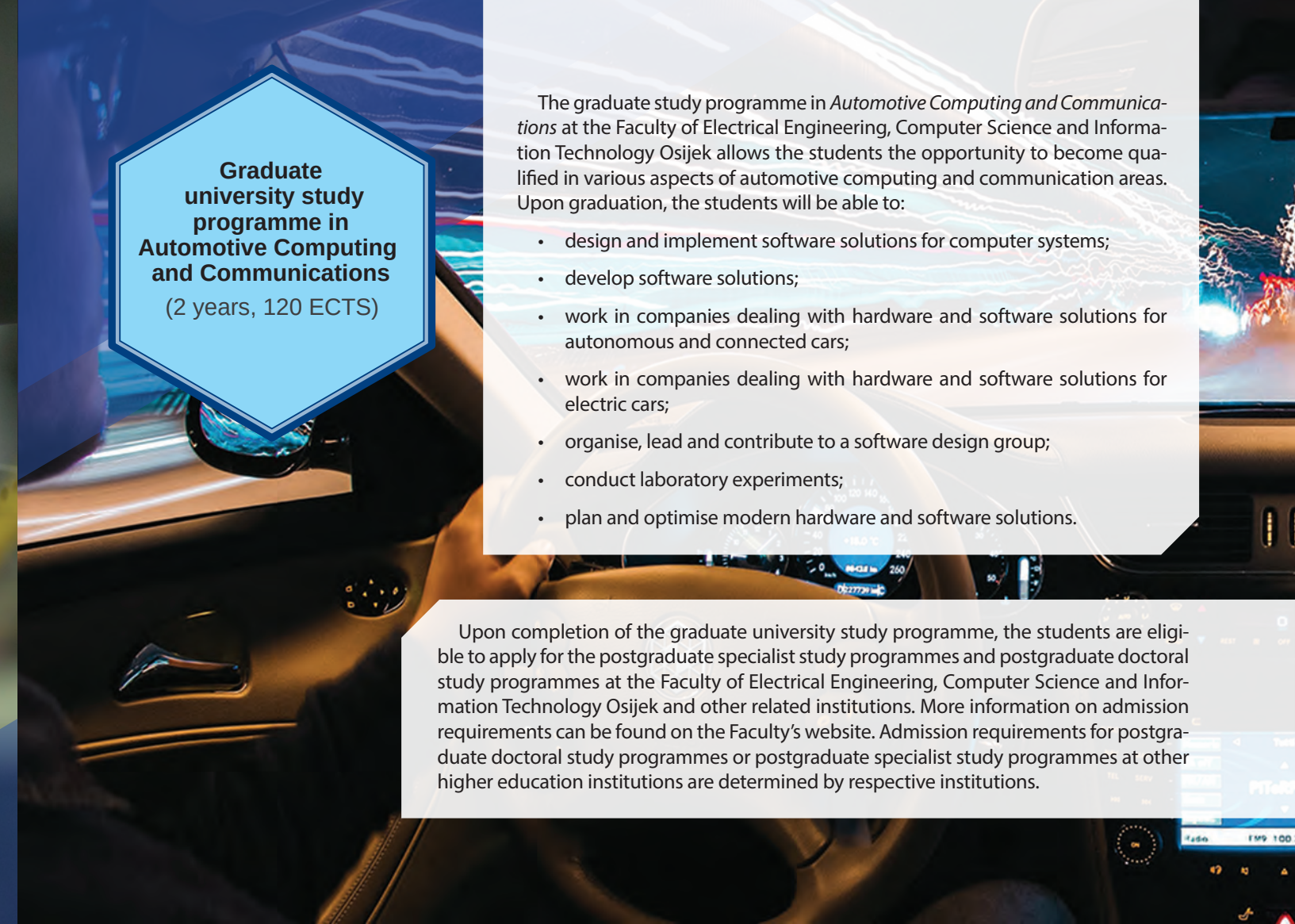
Elective modules:
Communication Technologies
Network Technologies

(2 years, 120 ECTS)

Upon completion of this study programme, the graduates will be able to solve complex engineering problems regarding communication and information systems, design communication systems, lead a team and research and develop information and communication technologies. They will be able to:

- work in the telecommunications industry, as public mobile radio networks operators, TV and radio concessionaires;
- install and maintain radio systems;
- engage in the research and development of software products for networks and services in the telecommunications industry;
- plan, maintain and operate public mobile and stationary telecommunication network and the Internet.

Furthermore, the students acquire additional competencies depending on the courses of their elective module (Communication Technologies and Network Technologies).



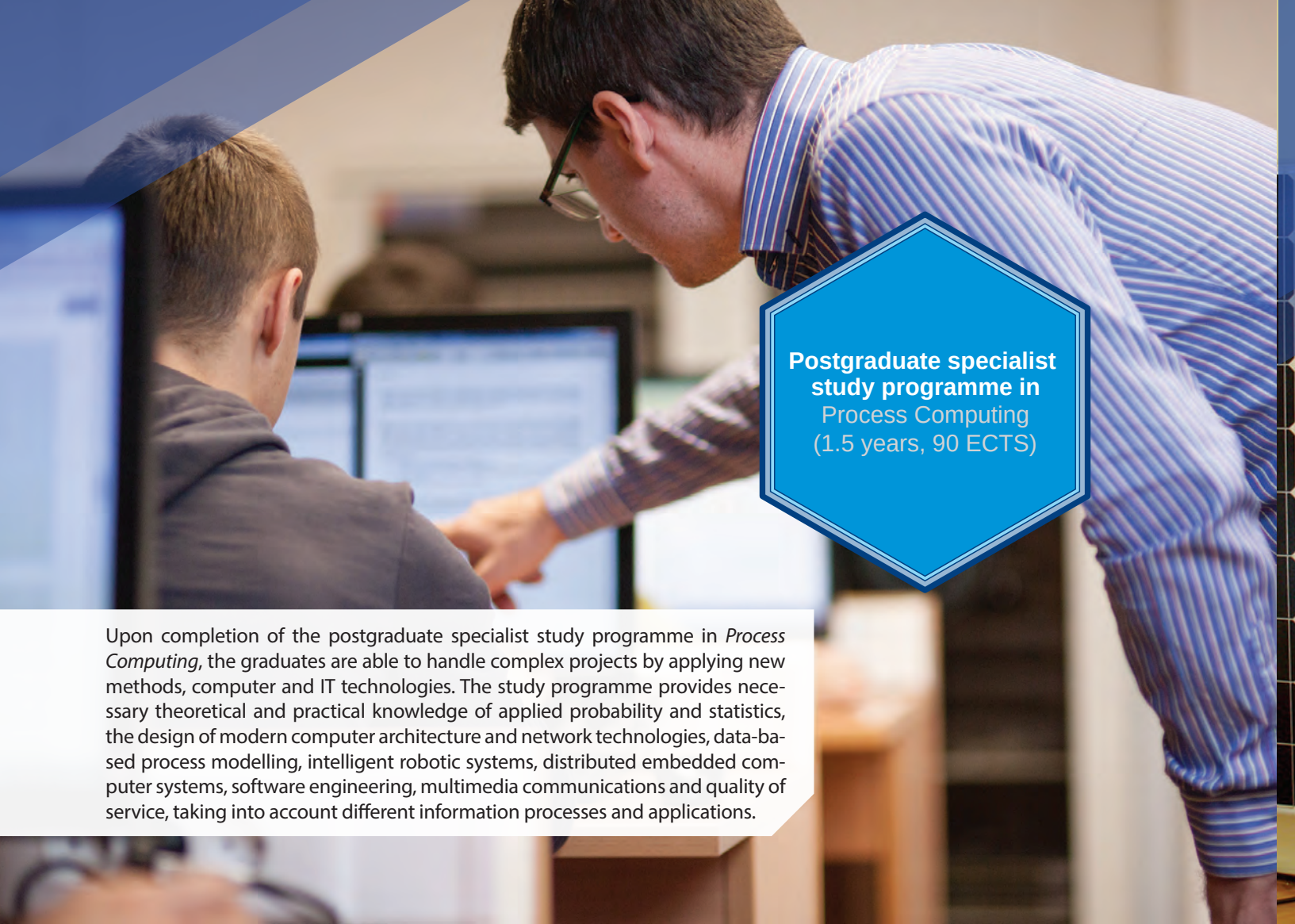
Graduate university study programme in Automotive Computing and Communications

(2 years, 120 ECTS)

The graduate study programme in *Automotive Computing and Communications* at the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek allows the students the opportunity to become qualified in various aspects of automotive computing and communication areas. Upon graduation, the students will be able to:

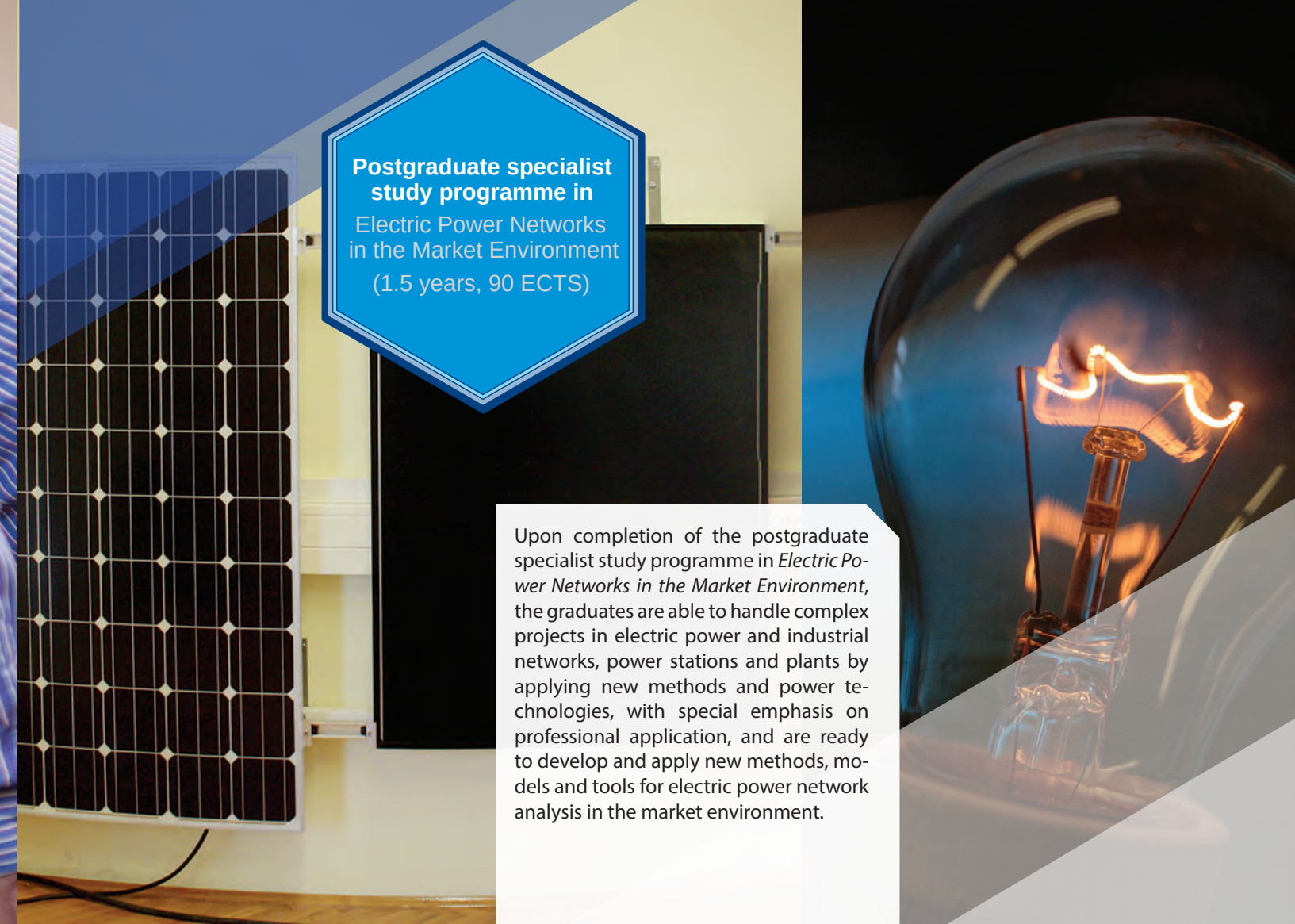
- design and implement software solutions for computer systems;
- develop software solutions;
- work in companies dealing with hardware and software solutions for autonomous and connected cars;
- work in companies dealing with hardware and software solutions for electric cars;
- organise, lead and contribute to a software design group;
- conduct laboratory experiments;
- plan and optimise modern hardware and software solutions.

Upon completion of the graduate university study programme, the students are eligible to apply for the postgraduate specialist study programmes and postgraduate doctoral study programmes at the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek and other related institutions. More information on admission requirements can be found on the Faculty's website. Admission requirements for postgraduate doctoral study programmes or postgraduate specialist study programmes at other higher education institutions are determined by respective institutions.



Postgraduate specialist study programme in Process Computing (1.5 years, 90 ECTS)

Upon completion of the postgraduate specialist study programme in *Process Computing*, the graduates are able to handle complex projects by applying new methods, computer and IT technologies. The study programme provides necessary theoretical and practical knowledge of applied probability and statistics, the design of modern computer architecture and network technologies, data-based process modelling, intelligent robotic systems, distributed embedded computer systems, software engineering, multimedia communications and quality of service, taking into account different information processes and applications.



Postgraduate specialist study programme in

Electric Power Networks in the Market Environment

(1.5 years, 90 ECTS)

Upon completion of the postgraduate specialist study programme in *Electric Power Networks in the Market Environment*, the graduates are able to handle complex projects in electric power and industrial networks, power stations and plants by applying new methods and power technologies, with special emphasis on professional application, and are ready to develop and apply new methods, models and tools for electric power network analysis in the market environment.

Postgraduate specialist study programme in Advanced Communication Technologies (1.5 years, 90 ECTS)

Upon completion of the postgraduate specialist study programme in *Advanced Communication Technologies*, the graduates are able to handle complex projects by applying new methods and information and communication technologies, with special emphasis on professional application. The study programme broadens and deepens their knowledge of stochastic processes and applications in communications, modern communication networks, advanced encryption systems and information protection, multimedia communications and service quality in different information and communication networks.

Postgraduate doctoral study programme of Electrical and Computer Engineering

Power Engineering, Communications and Informatics, Computer Engineering (3 years,180 ECTS)

The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek has had a postgraduate study programme since the year 2000. The postgraduate doctoral study programme in Electrical Engineering, which has been completely harmonized with the Bologna Declaration, has been carried out at the FERIT Osijek since the 2006/2007 academic year.

At the University Senate session, J.J. Strossmayer Osijek in 2016, the amendment was adopted to change the name of the doctoral study to Postgraduate doctoral study programme of Electrical and Computer Engineering. Upon completion of the postgraduate doctoral study programme, the students can conduct a research project, develop and apply new technologies as well as to educate professional and scientific staff. The postgraduate study has three branches: Power Engineering, Communications and Informatics, and Computer Engineering.

Branch Power Engineering

Postgraduate study in the Power Engineering module expands and deepens the Master's Degree in Electrical Engineering related to conventional and distributed power generation, advanced power grids and systems, efficient use and management as well as the electricity market. The study provides a comprehensive review of the physical processes and theoretical underpinnings related to these issues, as well as advanced scientific methods for planning the development, construction, analysis, management, protection, and maintenance of the power system.

Branch Communications and Informatics

Postgraduate course in Communication and Informatics module extends and deepens knowledge of communication network technologies, wireless communication systems, integrated circuit design, analysis and application of modulation procedures, advanced image, and video processing methods, television software, antenna systems, broadband multimedia services, advanced communications systems, and cybersecurity. Students acquire theoretical backgrounds and knowledge of scientific methods in the field of analysis, optimization, planning and design of communication and information systems, radio-communication systems, multimedia systems, and intelligent and broadband digital integrated services networks.

Branch Computer Engineering

Postgraduate study in the module Computer Engineering extends and deepens knowledge of algorithmic problem solving approach, current software engineering approaches, methods of analysis, synthesis and foundation of computer systems and data analysis systems embedded in all fields of human activity, as well as distributed and expert systems, and software solutions system and application software support. Students acquire theoretical background and knowledge of scientific methods in the field of analysis, optimization, planning, and design: current computer systems applicable in industry and business environments, and modern computer architectures and their software support.

SCIENTIFIC AND RESEARCH ACTIVITY

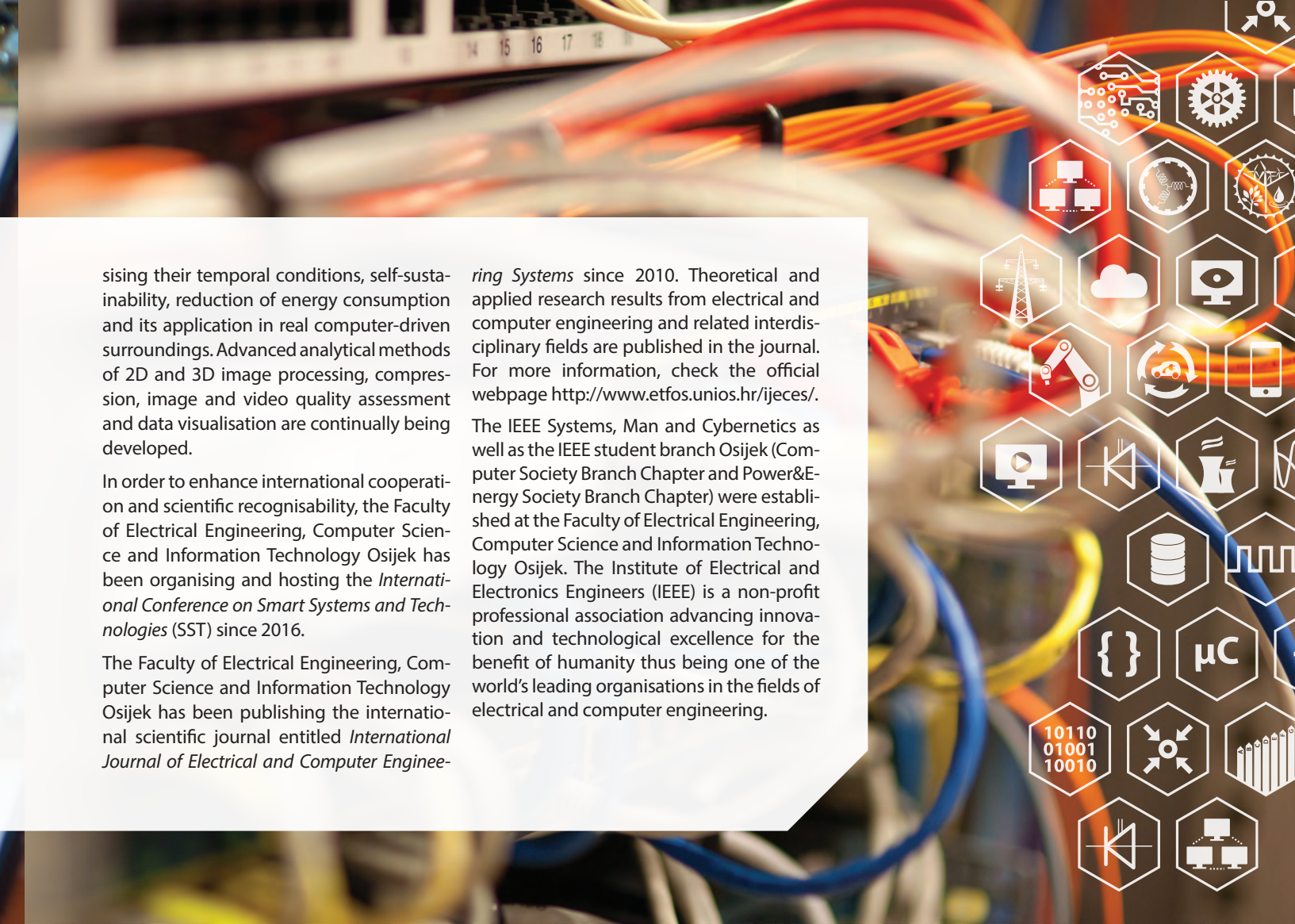
The scientists employed at the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek conduct research in the fields of electrical engineering, information and communication technologies, automation, electromechanical and computer engineering. In the past five years, the scientists participated in more than 30 scientific and technological projects and published more than 120 research papers in international journals.

The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek cooperates with the Scientific Centre of Excellence in Data Science and Cooperative Systems – the first Croatian centre of excellence in technical sciences. The Centre's purpose is to improve Croatian science encouraging its participation in the European Research Area.

Research on current-voltage characteristics, efficiency, production and a quality of energy with different technologies of photovoltaic systems with respect to regional climate conditions, estimations of reliability and availability of windmills, stochastic estimation of voltage sags caused by short-circuit faults in power systems and development of a solar-powered car are very important.

Substantial results are achieved in the fields of nonlinear systems, ferroresonant circuits, application of soft computing methods on machines and devices, chaos theory application, modelling of processes based on measurement results, building of soft-sensors for estimation of difficult-to-measure variables and industrial processes supervision. Furthermore, algorithms for overcoming obstacles for humanoid robots are created. Research on flexible manufacturing systems, robots and manipulators in manufacturing automation are conducted. In addition, the researchers are studying possibilities of applying evidential reasoning algorithms for a multiple attribute analysis in complex technical systems estimation, grey systems application theory and visual detection of malfunction in the ceramic tiles industry.

Research are carried out in the fields of radio frequency and capacitive passive identification systems, conformal antennas, radio waves propagation, optimisation of industrial wireless sensor networks as well as application and implementation of various QoS in computer networks. Further, a new energy efficient system for wireless measurement of biological signals has been developed. Numerous research are conducted in the fields of software engineering, artificial intelligence of embedded, distributed and service-oriented computer systems empha-



sising their temporal conditions, self-sustainability, reduction of energy consumption and its application in real computer-driven surroundings. Advanced analytical methods of 2D and 3D image processing, compression, image and video quality assessment and data visualisation are continually being developed.

In order to enhance international cooperation and scientific recognisability, the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek has been organising and hosting the *International Conference on Smart Systems and Technologies* (SST) since 2016.

The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek has been publishing the international scientific journal entitled *International Journal of Electrical and Computer Engineering Systems* since 2010. Theoretical and applied research results from electrical and computer engineering and related interdisciplinary fields are published in the journal. For more information, check the official webpage http://www.etfos.unios.hr/ijeces/.

The IEEE Systems, Man and Cybernetics as well as the IEEE student branch Osijek (Computer Society Branch Chapter and Power&Energy Society Branch Chapter) were established at the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek. The Institute of Electrical and Electronics Engineers (IEEE) is a non-profit professional association advancing innovation and technological excellence for the benefit of humanity thus being one of the world's leading organisations in the fields of electrical and computer engineering.

PROFESSIONAL ACTIVITY AND COOPERATION WITH THE ECONOMY

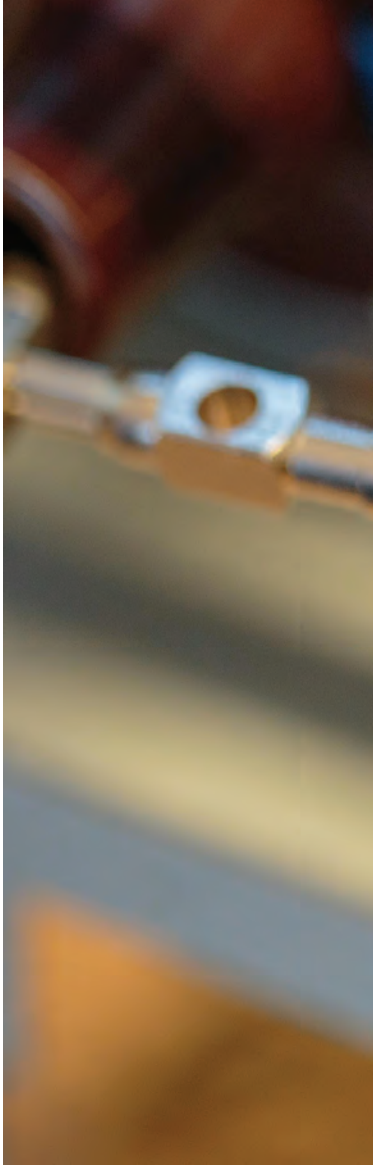
The main research and professional activities of cooperation with the economy are done within the Faculty departments. The Faculty signed cooperation agreements with more than 20 companies just in 2016 and 2017. Two faculty laboratories are extremely important for undertaking professional activities.

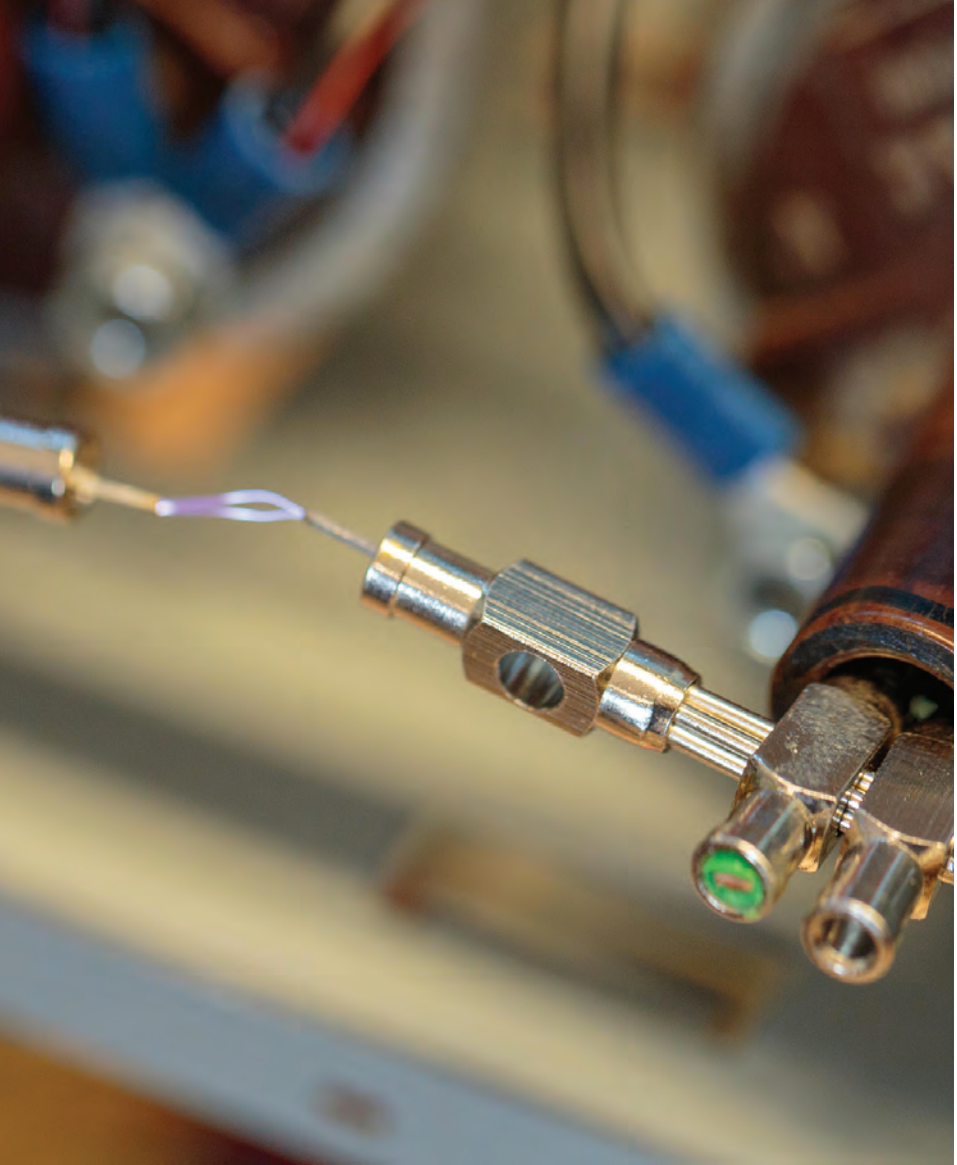
ELECTROMAGNETIC COMPATIBILITY LABORATORY

The Electromagnetic Compatibility Laboratory functions within the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek. The main activities undertaken in the laboratory are measurements of low frequency magnetic and electric fields and power quality insurance.

LABORATORY FOR HIGH FREQUENCY MEASUREMENTS

The Laboratory for High Frequency Measurements functions within the Department of Communications. The main activities done in the laboratory are measurements, calculations and estimations of high frequency electromagnetic fields and estimations of electromagnetic field radiation harmful effects in high frequency fields.





ENERGY PERFORMANCE CERTIFICATE OF BUILDINGS

Together with partners, the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek is authorised to carry out inspections and issue energy performance certificates of buildings compliant with current law regulations. It also suggests the implementation of the most recent technological solutions for improvements in energy efficiency.

STUP, PRO-STUDENT, CAREER DEVELOPMENT CENTER
TEACHING COLLABORATION WITH COMPANIES AND STUDENT START-UPS

STUP
PORTAL ZA STUDENTE FERIT-A I POSLODAVCE

Hoping that students and their future employers will get closer even during the study, on 1st May 2016, the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek (FERIT) launched a web-portal for FERIT students and employers – STUP http://stup.ferit.hr/.

The portal is a platform for partner companies to inform students about open internships, cooperation opportunities in doing master theses, scholarships, vacancies and all other activities that are of interest to FERIT students.

On the other hand, FERIT uses STUP to inform companies about curricular and extracurricular activities which they could participate in.

In the academic year 2018/2019, 3 years after the launch of STUP, some very significant indicators of it's success were evident:

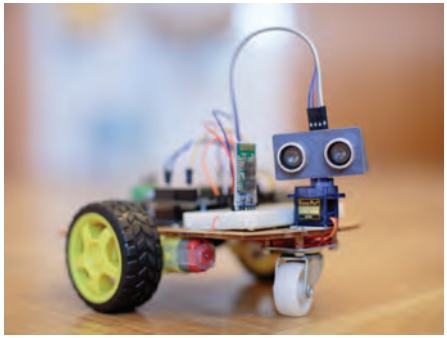
- 394 partner companies are STUP users;
- 165 companies offered 1040 internships;
- 695 students did their internships in 143 companies;
- 154 "confrontations" of companies and students during the teaching process (guest lectures and workshops at FERIT, visits to companies, etc.);
- 224 students presented their profiles to companies for possible additional cooperation (final papers and master theses, additional internships, scholarships, jobs, etc.).

Having that presented, openness for close cooperation of companies and students is evident. The Faculty has encouraged and made this more straightforward and effective by undertaking the initiative.

Pro- Student

PROJECTS CARRIED OUT BY FERIT STUDENTS

In addition, the Faculty supports students' self-employment, i.e. students' desire to start their own companies. Namely, the student competition Pro - Student (http://pro-student.ferit.hr/) supports and encourages the best and most interesting student ideas whether it is an idea with a commercial potential (KOMPOT call) or simply a non-commercial project of interest to students (ZAPRO call). In the last three years, students have proposed 56 ideas for interesting prototypes, devices and gadgets 18 of which were selected for funding by the Faculty.



CEK

CAREER DEVELOPMENT CENTRE

Since October 2017, all these activities have been carried out by the Faculty through the established Career Development Centre (CEK). CEK's activities include coordination and systematic support to students, companies and the University aiming to prepare students for the labour market.

Through this initiative, the Faculty aims to make students' "life after FERIT" easier, i.e. upon successful completion of the study, to introduce students to the labour market, increase their visibility and facilitate recruitment whether they want to work in a company or start their own.

LABUS
LABORATORY FOR SECONDARY AND PRIMARY SCHOOL STUDENTS

80 + EXPERIMENTS

840 + STUDENTS

WHAT IS LABUS?

LABUS (Laboratory for secondary and primary school students) is a portal developed by FERIT for primary and secondary school students and teachers, particularly those teaching mathematics, physics, electrical engineering, computer science and information technologies.

LABUS is, in fact, a student "workshop" where students, using experimental procedures and operating different measurement instruments, gain first-hand knowledge about the meaning and application of physical laws and develop their experimental, analytical and teamwork skills.

The central part of the portal LABUS is a collection of various experiments/laboratory exercises, which are primarily tailored to secondary, but also to primary school education level. Experiments/laboratory exercises are categorised by topics whose names follow both fundamental physical and applied engineering fields.

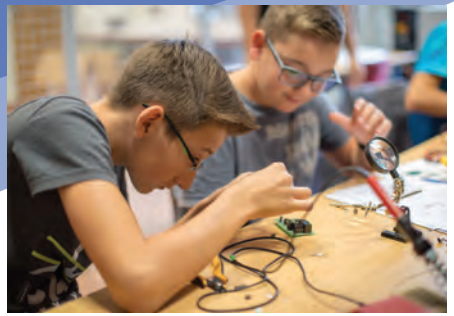
WHAT ACTIVITIES DOES LABUS INCLUDE?

- laboratory exercises, which are part of the curriculum and ongoing school year programme, carried out at time slots prearranged with primary and secondary school teachers
- half day and full day workshops which include laboratory exercises "kits"
- winter and/or summer schools
- assistance for county and national level competitions

WHERE IS LABUS?

Activities included in LABUS are carried out in the laboratories at FERIT and premises of the Centre of Technical Culture in Osijek.

For more details, please visit:
http://labus.ferit.hr/



LABUS FAIR

Labus Fair is one of Labus activities (http://labus.ferit.hr/) – a permanent FERIT programme aiming to connect primary and secondary STEM-related classes to higher education engineering classes and popularise research fields the teachers and researchers affiliated to the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek conduct their research in.

Labus Fair is a two-day manifestation held at the end of September in open spaces and laboratories of the Faculty of Electrical Engineering, Computer Science and Information Technology Osijek at Campus facilities (Cara Hadrijana 10b). The Fair was intended for primary and secondary school students and teachers, as well as kindergarten children and other interested citizens. Organising dozens of presentations and workshops in the fields of mathematics, physics and applied engineering fields (electrical engineering, energy and environment preservation, electronics, automation, robotics, computing and information technology) held at exhibition stands and specialised laboratories, teachers, assistants and students present some achievements in their research fields, teach some engineering skills to visitors thus using edutainment activities to present science and the use of new modern technologies. Consequently, visitors are motivated to pursue their future career in the STEM fields.

During this two-day manifestation, LABUS is visited by over 1500 all age visitors (kindergarten children, primary and secondary school students and other interested citizens). In addition to students and teachers from primary and secondary schools located in Osijek-Baranja county, the Fair is frequently visited by students and teachers from other Slavonian counties as well as adjacent countries (Bosnia and Herzegovina, Serbia).

INTERNATIONAL COOPERATION

The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek has been cooperating with other faculties, colleges, scientific and research institutions in both Croatia and abroad. The Office for International Cooperation establishes, promotes and strengthens international and institutional relationship. Cooperation has been realised with incoming and outgoing student, academic and non-academic staff mobility as well as scientific, research and professional activities. Academic staff can apply for teaching and research exchange programmes. Furthermore, students can conduct their Bachelor, Master and Doctoral theses research abroad. Additionally, students can do their practical training, take language courses, participate in projects, etc.

Through the Erasmus+ Programme students can study and work abroad, learn new skills and increase their employment opportunities. The Faculty of Electrical Engineering, Computer Science and Information Technology Osijek provides numerous Erasmus+ courses in English for incoming students.

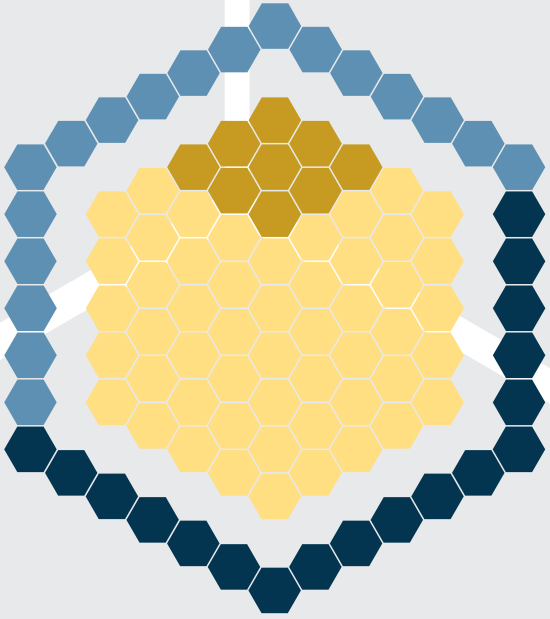
Teaching/non-teaching staff also benefits from the Erasmus+ programme in order to deepen teaching in European integration studies embodied in an official curriculum of a higher education institution, to conduct, monitor and supervise research. Additional benefits may also refer to other educational levels such as teacher training and compulsory education.

The International Association for the Exchange of Students for Technical Experience (***IAESTE***) is an independent, non-profit and non-political student exchange organisation with 85 member states from all over the world. It provides students in technical degrees (primarily Science and Engineering) with paid, course-related, training abroad. Since it was established, IAESTE Osijek activities have been organised by student volunteers. In addition to outgoing and incoming student practical trainings, IAESTE Osijek supports students' continuous education and practical training by organising seminars, trips to exhibitions and other specialised events abroad.

The EUROWEB+ Scholarship Programme is open to selected nationals in the EU countries and the Western Balkans who want to study or work at one of the partner institutions. It is a scholarship programme for students on undergraduate, master, doctoral and post-doctoral level, as well as for university staff in academic or administrative positions financed by the European Commission. In addition to 17 institutional partners, the FERIT Osijek participates in the mobility programme.

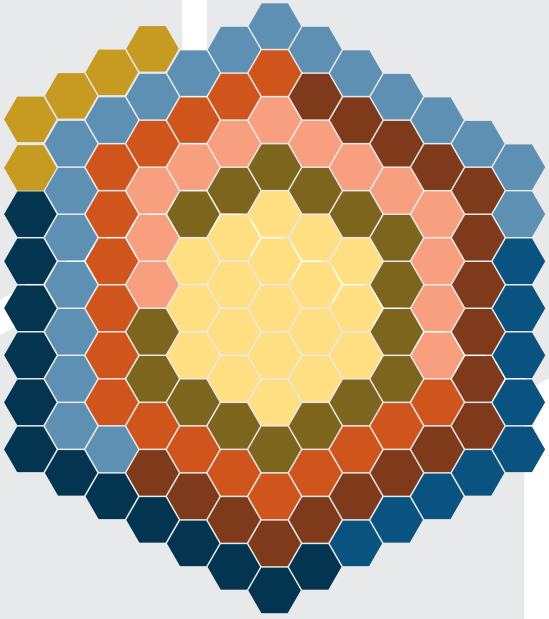
The overall objective of the EUROWEB+ project is to create a partnership in research and education with the aim of strengthening the ties between the EU member states and the Western Balkans. The official project webpage is available at http://www.mrtc.mdh.se/eurowebplus.

PREMISES AND EQUIPMENT



- 12 LABORATORIES
- 56 TEACHERS' OFFICES
- 13 LECTURE HALLS
- 9 COMPUTER CLASSROOMS

TEACHERS



- 13 FULL PROFESSORS
- 18 ASSOCIATE PROFESSORS
- 18 ASSISTANT PROFESSORS
- 13 LECTURERS, SENIOR LECTURERS AND COLLEGE PROFESSORS
- 9 POSTDOCTORAL RESEARCHERS
- 20 ASSISTANTS AND RESEARCH ASSISTANTS
- 5 EMPLOYEES PROMOTED TO PROFESSIONAL TITLES
- 16 LABORATORY TECHNICIANS
- 20 + EXTERNAL ASSOCIATES

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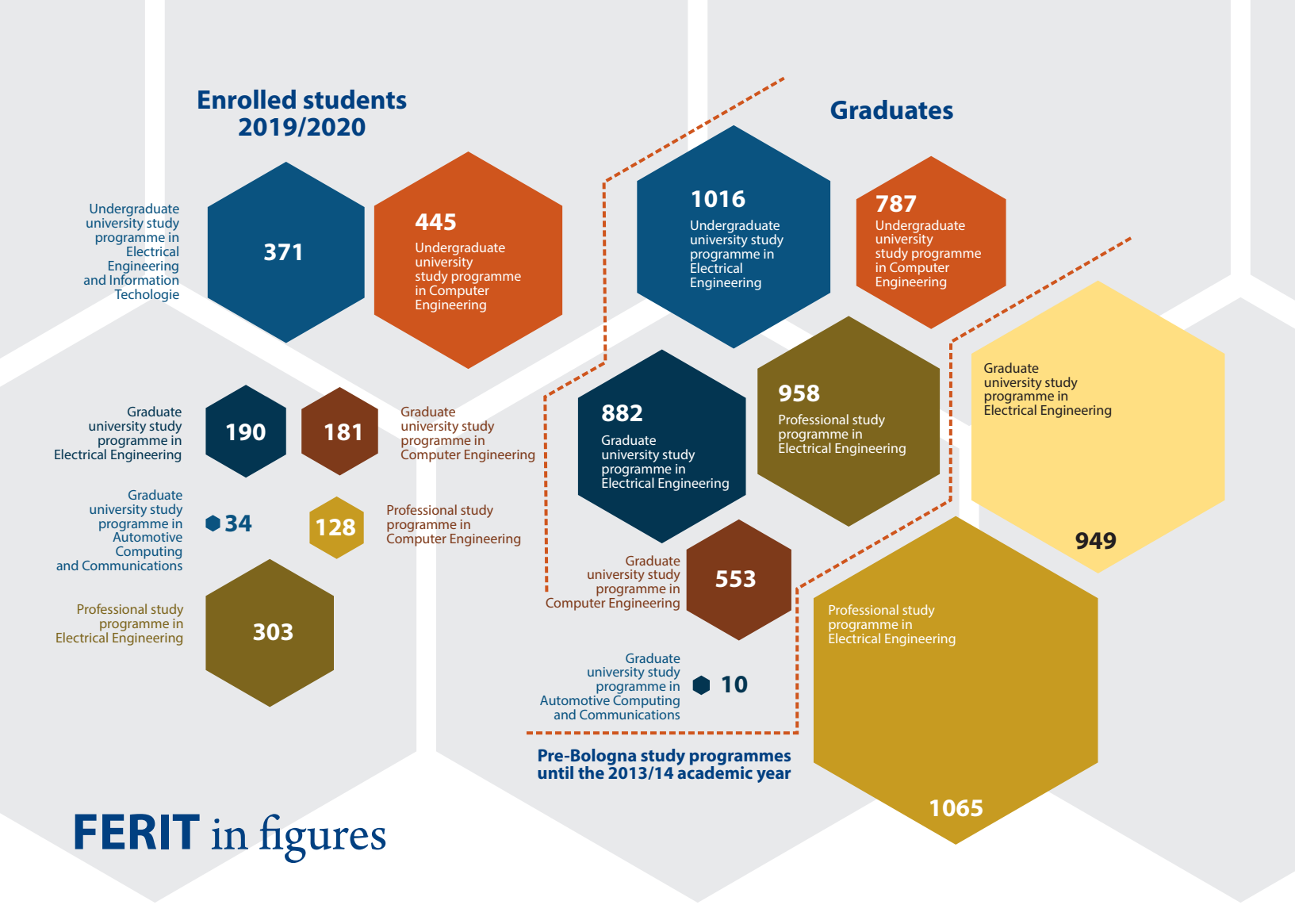

FERIT in figures

PARTNER INSTITUTIONS

ALBANIA
- Aleksandër Xhuvani University of Elbasan
- Polytechnic University of Tirana

AUSTRIA
- Campus 02 University of Applied Sciences, Graz
- Vienna University of Technology
- Alpen-Adria-Universität Klagenfurt

BOSNIA AND HERZEGOVINA
- Faculty of Electrical Engineering, University of Sarajevo
- University of Mostar
- University of Tuzla

BULGARIA
- "Angel Kanchev" University of Ruse

FRANCE
- Telecom ParisTech

HUNGARY
- Faculty of Mechanical Engineering and Automation, Kecskemét
- Óbuda University, Budapest
- University of Pécs
- Budapest University Of Technology And Economics

GERMANY
- Albstadt-Sigmaringen University
- City University of Applied Sciences, Bremen
- Paderborn University
- University of Applied Sciences Würzburg-Schweinfurt
- Deggendorf Institute of Technology, University of Applied Sciences Deggendorf
- University of Applied Sciences Rosenheim
- University of Applied Sciences Gießen
- Paderborn University

ITALY
- University of L'Aquila

LATVIA
- Latvian Business College

MACEDONIA
- International University of Struga

MONTENEGRO
- Mediterranean University Montenegro

NETHERLANDS
- Hanze University of Applied Sciences Groningen

POLAND
- Lodz University of Technology
- Poznan University of Technology
- University of Applied Sciences in Nysa
- Lomza State University of Applied Sciences
- University of Science and Technology, Bydgoszcz

PORTUGAL
- Polytechnic Institute of Castelo Branco
- Polytechnic Institute of Porto

ROMANIA
- "1 Decembrie 1918" University of Alba Iulia
- Technical University of Cluj-Napoca
- University Politehnica of Bucharest
- University "Stefan cel Mare" of Suceava

USA
- College of Computing and Informatics, The University of North Carolina at Charlotte, NC
- North Carolina University, Raleigh, NC

SLOVENIA
- Faculty of Electrical Engineering and Computer Science, University of Maribor
- Jožef Stefan International Postgraduate School, Ljubljana
- University of Primorska, Koper

SERBIA
- Faculty of Electronic Engineering, University of Niš
- Faculty of Technical Sciences, University of Novi Sad
- University of Belgrade
- Technical College of Professional Studies, Subotica

SLOVAKIA
- Technical University of Kosice Faculty of Electrical Engineering and Informatics
- University of Žilina Faculty of Management Science and Informatics
- Slovak University of Agriculture in Nitra
- Slovak University of Technology in Bratislava, Faculty of Electrical Engineering and Information Technology

SPAIN
- Barcelona College of Industrial Engineering

SWEDEN
- Mälardalen University, Västerås

SWITZERLAND
- The University of Applied Sciences Northwestern Switzerland FHNW

TURKEY
- Süleyman Demirel University, Isparta