

## **ELECTRICAL-ELECTRONIC ENGINEERING (Y.L)**

### **Qualification Awarded**

Graduates of this program are awarded The Master's Degree in Electrical and Electronic Engineering.

### **Level of Qualification**

Master's Degree

### **Specific Admission Requirements**

The admission and enrolment requirements for the Electrical and Electronics Engineering Master Program are specified in the Application of Graduate Programs, Student Admission and Registration Principles of the Kayseri University Graduate Education Regulation, section 3.

### **Specific Arrangements for Recognition of Prior Learning**

According to the Kayseri University Graduate Education Regulation, students who enroll in the program are able to transfer their credits if the courses taken at other higher education institutions based on certain principles and the learning outcomes of the courses are compatible with the program.

### **Qualification Requirements and Regulations**

The qualification requirements and regulations of the Electrical and Electronics Engineering graduate program are specified in the 7th section of the "Kayseri University Graduate Education Regulation".

### **Profile of the Program**

With the Law on the Amendment of the Law on Higher Education and Certain Laws and Decree Laws published in the Official Gazette No. 30425 dated May 18, 2018, the Institute was established under the management of Kayseri University Rectorate, under the name 'Institute of Graduate Education'. The Electrical and Electronics Engineering Graduate Program, which was opened within the Graduate Education Institute, started its educational

practices by receiving its first students in the 2019-2020 Academic Year.

This program trains competent technical experts, engineers and academicians, provides the spread of science in its field and contributes to the development of literature. Electrical and Electronics Engineering Graduate Program provides graduate level information in its sub-branches and prepares students for the doctorate program; developing the ability to access, evaluate and interpret information by conducting scientific research; trains individuals who strengthen their knowledge of analysis and design; find new research methods in their fields or gain the ability to produce new knowledge by applying previous methods, trains individuals who are strictly committed to their professional ethics; individuals who have respect for science and technology, and specialized in a particular field.

### **Key Learning Outcomes**

- 1- Graduates gain the ability to define engineering problems in their fields by using their knowledge in mathematics, basic sciences and basic engineering.
- 2- Graduates gain the ability to produce innovative solutions to engineering problems in their fields by using their experience in engineering.
- 3- Graduates gain the ability to design and develop electronic systems that can meet the needs.
- 4- Graduates gain the ability to use electronic engineering tools and software in an effective way.
- 5- Graduates gain the ability to develop electronic engineering tools and software.
- 6- Graduates gain the ability follow scientific studies in the field on national and international level.
- 7- Graduates gain the ability follow scientific and technological developments in depth in the field nationally and internationally.
- 8- Graduates gain awareness of applications in business life.
- 9- Graduates gain the ability to participate and lead effectively in disciplinary and multidisciplinary team work.

10- Graduates gain the ability to conduct scientific studies and publish them by adhering to ethical values.

### Access to Further Studies

Students who graduate from our program can switch to doctoral programs on condition that they meet the necessary conditions.

### Course Structure Diagram with Credits

ELECTRICAL-ELECTRONIC ENGINEERING (Y.L)

Course Structure Diagram with Credits

1st Semester Course Plan					
Course unit code	Course unit title	Type of course unit	Lecture + Recitation	Local credits	ECTS credits
EEM570	SCIENTIFIC RESEARCH TECHNIQUES AND ETHICS	Compulsory	3+0	6,00	6,00
EEM515	DYNAMIC SYSTEMS AND CHAOS	Elective	3+0	6,00	6,00
EEM517	PHOTONIC FOR ENGINEERS	Elective	3+0	6,00	6,00
EEM523	PLASMONICS AND METAMATIC MATERIALS	Elective	3+0	6,00	6,00
EEM547	ELECTRONIC CIRCUIT DESIGN AND SIMULATION	Elective	3+0	6,00	6,00
EEM561	IMAGE PROCESSING AND COMPUTERS VISION TECHNIQUES	Elective	3+0	6,00	6,00
EEM563	ARTIFICIAL INTELLIGENCE APPLICATIONS IN RENEWABLE ENERGY	Elective	3+0	6,00	6,00
EEM571	DIGITAL FILTERS	Elective	3+0	6,00	6,00
EEM572	ANTENNA THEORY	Elective	3+0	6,00	6,00
EEM573	INTELLIGENT OPTIMIZATION TECHNIQUES	Elective	3+0	6,00	6,00
EEM575	COMMUNICATION THEORY	Elective	3+0	6,00	6,00
EEM576	BIOMEDICAL SIGNAL PROCESSING	Elective	3+0	6,00	6,00
EEM577	DATA MINING	Elective	3+0	6,00	6,00
EEM578	SIMULATION OF COMMUNICATION SYSTEMS	Elective	3+0	6,00	6,00
EEM579	INFORMATION NETWORKS	Elective	3+0	6,00	6,00
EEM587	NONLINEAR CIRCUITS AND CHAOS	Elective	3+0	6,00	6,00

The students are to take a total of 30 ECTS every semester giving priority to compulsory courses.

2nd Semester Course Plan						
Course unit code	Course unit title	Type of course unit	Lecture + Recitation	Local credits	ECTS credits	
EEM 500	SEMINAR	Compulsory	0+2	6,00	6,00	
EEM560	SCIENTIFIC RESEARCH TECHNIQUES AND ETHICS	Compulsory	3+0	6,00	6,00	
EEM 554	PHOTONIC AND LASER TECHNOLOGIES	Elective	3+0	6,00	6,00	
EEM518	PHOTONIC PERCEPTION	Elective	3+0	6,00	6,00	
EEM520	NETWORK AND SYSTEM SECURITY	Elective	3+0	6,00	6,00	
EEM556	HARDWARE DESIGN WITH FPGA	Elective	3+0	6,00	6,00	
EEM559	FRACTURE THEORY	Elective	3+0	6,00	6,00	
EEM560	EVOLUTIONARY NEURAL NETWORKS	Elective	3+0	6,00	6,00	
EEM561	MODELING TECHNIQUES	Elective	3+0	6,00	6,00	
EEM562	SIGNAL PROCESSING APPLICATIONS WITH MATLAB	Elective	3+0	6,00	6,00	
EEM562	MACHINE LEARNING AND METHODOLOGICAL ALGORITHMS	Elective	3+0	6,00	6,00	
EEM563	FLEXIBLE CALCULATION METHODS	Elective	3+0	6,00	6,00	
EEM564	INFORMATION SECURITY	Elective	3+0	6,00	6,00	
EEM566	IMAGE PROCESSING APPLICATIONS	Elective	3+0	6,00	6,00	
EEM567	BASICS OF WIRELESS COMMUNICATION	Elective	3+0	6,00	6,00	
EEM569	EMBEDDED SYSTEMS	Elective	3+0	6,00	6,00	
EEM588	CHAOTIC SYSTEMS AND ELECTRONIC CIRCUIT APPLICATIONS	Elective	3+0	6,00	6,00	
EEM599	PATTERN RECOGNITION	Elective	3+0	6,00	6,00	
The students are to take a total of 30 ECTS every semester giving priority to compulsory courses.						

3rd Semester Course Plan						
Course unit code	Course unit title	Type of course unit	Lecture + Recitation	Local credits	ECTS credits	
EEM711	THESIS STUDY 1	Compulsory	0+1	25,00	25,00	
EEM751	RESEARCH AREA 1	Compulsory	4+0	5,00	5,00	
The students are to take a total of 30 ECTS every semester giving priority to compulsory courses.						
4th Semester Course Plan						
Course unit code	Course unit title	Type of course unit	Lecture + Recitation	Local credits	ECTS credits	
EEM712	THESIS STUDY 2	Compulsory	0+1	25,00	25,00	
EEM752	RESEARCH AREA 2	Compulsory	4+0	5,00	5,00	
The students are to take a total of 30 ECTS every semester giving priority to compulsory courses.						

## Graduation Requirements

Graduation requirements are specified in Kayseri University Graduate Education Regulation.