

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY



**KTO KARATAY
ÜNİVERSİTESİ**

KTO KARATAY UNIVERSITY FACULTY OF ENGINEERING

ERASMUS+ Course Catalogue

for the academic year 2019/2020 Spring Semester

KONYA, 2019-2020

(ALPHABETICAL) LIST OF COURSES WITH CODES

Algoritma ve Programlama – EEE121

Analog CMOS Integrated Circuits - EEE874

Antenna Engineering - EEE868

Bitirme Projesi I – EEE729

Bitirme Projesi II – EEE829

Calculus I - MAT112

Calculus II- MAT 212

Devre Teorisi I - 321

Devre Teorisi II – EEE421

Digital Integrated Circuits - EEE774

Digital Systems -EEE332

Electrical Distribution Systems - EEE786

Electromagnetic Compatibility - EEE770

Electronic Circuits – EEE422

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Electronic Devices -EEE326

Elektrik Makineleri – EEE625

Elektrik-Elektronik Mühendisliği İçin Programlama -EEE223

Elektrik-Elektronik Mühendisliği Matematiği I EEE237

Elektrik-Elektronik Mühendisliği Matematiği II – EEE337

Elektrik-Elektronik Mühendisliğine Giriş I – EEE129

Elektrik-Elektronik Mühendisliğine Giriş II EEE229

Elektrik-Elektronik Tasarım I – EEE529

Elektrik-Elektronik Tasarım II - EEE629

Elektromanyetik Alan Teorisi – EEE423

Elektromanyetik Dalga Teorisi - EEE523

Elektromekanik Enerji Dönüşümü - EEE525

Haberleşme Mühendisliği -EEE621

High Voltage Techniques - EEE840

Illumination Techniques and Indoor Installation - EEE844

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Independent Study I - EEE349

Independent Study II - EEE449

Introduction to Micro-Electromechanical Systems - EEE888

Kontrol Mühendisliği – EEE623

Labview Programming - EEE890

Machine Drive Systems - EEE846

Medical Imaging - EEE782

Microprocessors - EEE522

Microwave Engineering - EEE768

Modern Control Theory - EEE856

Numerical Methods for EEE - EEE872

Olasılık ve İstatistik – EEE429

Opto Electronics - EEE878

Physics I – FİZ112

Physics II – FİZ212

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Power Electronics - EEE748

Process Control - EEE854

Renewable Energy - EEE886

Satellite Communications - EEE864

Sinyaller ve Sistemler - EEE521

Telecommunication Electronics - EEE870

Wireless Communication - EEE764

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Calculus I - Course Code: MAT112

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 4	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 1st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Functions, limits, continuity and derivatives. Applications. Extreme values, the Mean value Theorem and its applications. L'Hopital's rule. Graphing. Optimization problems. The indefinite integral. Techniques of integration. The definite integral. Area and volume as integrals.	
EFFECTS OF EDUCATION PROCESS: The sequence MAT112 is the standard complete introduction to the concepts and methods of calculus. It is taken by all engineering students. The emphasis is on concepts, solving problems, theory and proofs. Students will develop their reading, writing and questioning skills in Mathematics.	
LITERATURE (OPTIONAL): George B.Thomas, Maurice D. Weir, Joel R.Hass, Thomas' Calculus 11th Edition	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Physics I - Course Code: FİZ112

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 1st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
<p>CONTENTS: The main objectives are combining with specialist learning in some areas, that lays the foundation for research in physics and related sciences, attracting high quality students from a variety of backgrounds, Increasing students' awareness of the industrial, environmental and social context of the subject.</p> <p>Subjects: Measurement; vectors. Motion in one dimension. Plane motion. Dynamics of particuls Work and energy. Collision.Kinetics of rotation. Oscillation. Inflection of the mass. Fluid mechanics. Heat and the first law of thermodynamics. Kinetic theory of gas. Second law of thermodynemics.</p>	
EFFECTS OF EDUCATION PROCESS: To provide an education in physics that: provides students with a physics education with breadth across the physics disciplines, develops the potential of each student to meet new challenges and to lay the foundations of versatility and innovative thinking they will need in careers in industry, commerce, the public sector and education.	
LITERATURE (OPTIONAL): Raymond A. Serway, John W. Jewett, Physics for Scientists and Engineers (8th Edition), Volume 1, Chapters 1-22	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektrik-Elektronik Mühendisliğine Giriş I - **Course Code:** EEE129

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (4)
SEMESTER: Fall	CLASS LEVEL: 1st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Explanation of Electrical and Electronics Engineering. Introduction to Electrical and Electronics Lab. Application fields of Electrical and Electronics Engineering. Basic criterions for a global engineer. Introduction to presentation skills. Introduction to report writing skills. Introduction to team-work concept. Introduction to patent searching and literature research.	
EFFECTS OF EDUCATION PROCESS: This course introduces the Electrical and Electronics Engineering criterion and its application fields.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Algoritma ve Programlama - **Course Code:** EEE121

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 2+2	ECTS TYPE: ECTS (6)
SEMESTER: Fall	CLASS LEVEL: 1st Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Basic Computer Hardware, Problem solving using computers. The concept and notation of algorithms. Problem analysis and algorithm design. Development of algorithms and their implementation in a procedure-oriented language. Topics include; Integrated programming environment (editing, computing, debugging), data types, operators, input/output, structured programming, program control, subprograms, passing parameters. Arrays and array processing.	
EFFECTS OF EDUCATION PROCESS: The course aims to teach the computer hardware and to make an introduction to the C and C++ Programming Language and Algorithms.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Calculus II - Course Code: MAT212

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 4	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 1st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Sequences. Series with positive terms, series with arbitrary terms, absolute and conditional convergence, power series, Taylor and Maclaurin series. Vector calculus. Functions of multiple variables; limits, continuity, partial derivatives, chain rule, directional derivatives, maxima and minima, Lagrange multipliers, Taylor's formula. Double and triple integrals, line integrals, Green's theorem in the plane, Surface area and surface integrals, Divergence and Stokes theorem.	
EFFECTS OF EDUCATION PROCESS: The emphasis is on concepts, solving problems, theory and proofs. Students will develop their reading, writing and questioning skills in Mathematics.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Physics II - Course Code: FIZ212

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 1st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: The electric fields and Gauss' law, Electrical potential, Capacitors and dielectrics, Current and resistance, Elektromotive force and electric circuits Magnetic field and Ampere's law, Faraday's law, Inductance and L-C-R circuits, Magnetic properties of solids, Alternating Currents. Electromagnetic waves, Optics, Wave optics and interference. Diffraction. Light and quantum physics.	
EFFECTS OF EDUCATION PROCESS: To provide an education in physics that: provides students with a physics education with breadth across the physics disciplines, develops the potential of each student to meet new challenges and to lay the foundations of versatility and innovative thinking they will need in careers in industry, commerce, the public sector and education.	
LITERATURE (OPTIONAL): Raymond A. Serway, John W. Jewett, Physics for Scientists and Engineers (8th Edition), Volume 2, Chapters 23-44.	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektrik-Elektronik Mühendisliği Matematiği I - **Course Code:** EEE237

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 4	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 2nb Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Matrix algebra. Systems of linear algebraic equations. Eigenvalues and eigenvectors. Linear vector spaces. Fundamentals of vector analysis. Vector algebra. Line, surface and volume integrals. Green`s theorem in the plane, Stokes and Gauss theorems. Matrices. Determinant. Systems of linear equations.	
EFFECTS OF EDUCATION PROCESS: To provide students with a good understanding of the concepts and methods of linear algebra. To help the students develop the ability to solve problems using linear algebra. To connect linear algebra to other fields.	
LITERATURE (OPTIONAL): Kreyszig, E., Advanced Engineering Mathematics, 9th Ed., John Wiley & Sons, 2005	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektrik-Elektronik Mühendisliği İçin Programlama - **Course Code:** EEE223

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 2+2	ECTS TYPE: ECTS (4)
SEMESTER: Spring	CLASS LEVEL:
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Introduction to Matlab: Matlab as Calculator, Syntax, Simple Graphics, Introduction to Matrices and Operators; Combining and Transforming Matrices, Arithmetic operators in Matlab, Introduction to Functions, Subfunctions and Scope	
EFFECTS OF EDUCATION PROCESS: Upon successful completion of this course, students will be able to use MATLAB program and tools in an effective way.	
LITERATURE (OPTIONAL): Meltem Bostancı(2013). Uluslararası İletişim Ekonomi Politikası /İletişim Politikalarında Küreselleşme. Chiviyazıları Yayınevi Gonca Yıldırım(2015). Uluslararası Halkla İlişkiler Perspektifinden Kamu Diplomasisi. Beta Basım Yayım	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektrik-Elektronik Mühendisliğine Giriş II - **Course Code:** EEE229

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (3)
SEMESTER: Spring	CLASS LEVEL: 1st Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: General information about Electrical-Electronics Engineering, General information about Electrical-Electronics Engineering Laboratories, General information about Electrical-Electronics Engineering research fields and sub-branches, Presentation techniques, Report writing techniques, Team work concept and importance, Patent and literature review	
EFFECTS OF EDUCATION PROCESS: The course aims to teach the research areas and sub-branches of Electrical and Electronics Engineering	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Digital Systems - **Course Code:** EEE332

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3+2	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 2nd Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Number systems. Boolean algebra, logic networks and their simplification. Logic design with gates. Combinational circuits, Adders, MUX, DEMUX, Decoder, Encoder etc. Sequential circuits, Flip-Flops, sequential counters, shift registers, computer organization, arithmetic logic, memory and control units, mini and microcomputer systems	
EFFECTS OF EDUCATION PROCESS: Upon successful completion of this course, students will be able to represent information in a digital form, project combinational systems, know the components available for digital circuits implementation, project digital circuits for specific functions, project digital systems, analyze the functional behavior of digital circuits and systems	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Devre Teorisi I - Course Code: EEE321

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 4+2	ECTS TYPE: ECTS (6)
SEMESTER: Fall	CLASS LEVEL: 2nd Year
LANGUAGE OF INSTRUCTION: TÜRKÇE	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Electric Circuit Variables, circuit elements. Simple resistance circuits. Circuit analysis techniques. Circuit theories, circuit analysis topologies. Inductance and capacitance. State variables and state equations. First order RL and RC circuits. Natural and cascade responses of second order RLC circuits. Introduction to OPAMPs.	
EFFECTS OF EDUCATION PROCESS: This course is designed to teach basic principles and design methods of simple electrical circuits as a preparation for advanced electrical and electronic systems using basic techniques.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Electronic Devices - **Course Code:** EEE326

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3+2	ECTS TYPE: ECTS (6)
SEMESTER: Fall	CLASS LEVEL: 2nd Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Diodes, Diode applications, Zener Diodes and its applications, Bipolar Junction Transistor, BJT applications, OPAMPs and its applications. Basic single-stage transistor amplifiers and frequency responses. Feedback in amplifiers. Power amplifiers. Power supplies and regulators.	
EFFECTS OF EDUCATION PROCESS: Upon successful completion of this course, students will be able to understand the basic electronic components such as diodes, resistors, LEDs, BJT and FET transistors etc from their physical structures up to usage in some specific circuits like diode rectifiers, diode AND, OR gates, transistor amplifiers, DC biasing circuits etc. They will also design and implement basic analog circuits using various diodes and transistors. Besides students will be ready for taking higher level courses such as “Electronic Circuits” to become an electrical engineer.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektrik-Elektronik Mühendisliği Matematiği II - **Course Code:** EEE337

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 4	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 2nd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Higher order differential equations, Applications of second order differential equations with constant coefficients, Linear differential equations, Solutions of linear differential equations with power series, Partial differential equations, Euler type differential equations	
EFFECTS OF EDUCATION PROCESS: To teach differential equations and applications	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Olasılık ve İstatistik - **Course Code:** EEE429

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 2nd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Introduction to probability and statistics, Basic probability, Independent events, Some probability models, Random variables, Distributions. Discrete and continuous distributions, Variation of independent random variables, Conditional distributions, Mathematical expectations: mean, variance, moment generating functions, Characteristic functions, Conditional expectation, Limited distribution	
EFFECTS OF EDUCATION PROCESS: To give some basic terms and concepts in probability and statistics and to teach how and why statistical methods and probability theory are used in engineering.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Electronic Circuits - Course Code: EEE422

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3+2	ECTS TYPE: ECTS (6)
SEMESTER: Spring	CLASS LEVEL: 2nd Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: BJT, FET, JFET, MOSFET and their AC Models, Amplifiers (small signal and power), Frequency Responses of Amplifiers, OP-AMPS.	
EFFECTS OF EDUCATION PROCESS: To teach the basic principles and applications of analog part of electronic circuits.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektromanyetik Alan Teorisi - **Course Code:** EEE423

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 2nd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Electric Field, Magnetic Field, Scalar Potential, Vector Potential, Electrostatic Energy, Magnetostatic Energy, Ampere's Law, Faraday's Law, Faraday's Lattice, Maxwell's Equations	
EFFECTS OF EDUCATION PROCESS: To learn basic information about electromagnetic field	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Devre Teorisi II - Course Code: EEE421

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3+2	ECTS TYPE: ECTS (6)
SEMESTER: Spring	CLASS LEVEL: 2nd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Circuit variables. Circuit elements and mathematical models. Simple resistance circuits. Multi-terminal and multi-port algebraic components. Circuit analysis techniques. Reactive components. First and second order RLC circuits. Sinusoidal steady state analysis. Three-phase circuits.	
EFFECTS OF EDUCATION PROCESS: The course aims to teach the elements and analysis of AC and DC circuits.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Sinyaller ve Sistemler - Course Code: EEE521

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Introduction to Signals and Systems, Continuous-Discrete Time Signals, Continuous-Discrete Time LTI Systems, Properties of LTI Systems and Block Diagrams, Response of Continuous LTI Systems for Exponential Functions, Fourier Series in Non-Periodic Signals, Fourier Series Fourier Analysis in Periodic Signals - I, Periodic Signals and Fourier Transform in Continuous Time, Response of Discrete LTI Systems for Exponential Functions, Fourier Series in Non-Periodic Signals, Fourier Series in Periodic Signals, Z-transform	
EFFECTS OF EDUCATION PROCESS: Starting from the descriptive and carrier unit function, which we call the signal, to create a basis for signal and related signal systems by learning a basic theoretical content covering all active communication technologies with the addition of mathematical models, distributions and statistics.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektromekanik Enerji Dönüşümü - **Course Code:** EEE525

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Energy technology and resources. Three-phase systems and magnetic circuits. Transformers: Ideal and physical models and equivalent circuit and transformer testing. Electromechanical energy conversion. Productivity and process performance. Sensors and actuators: Relays, cascading and positioning systems, switched reluctance machines, synchronous reluctance machines, direct current (DC) machines.	
EFFECTS OF EDUCATION PROCESS: The course aims to teach energy transformations and components in three-phase and single-phase systems.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Microprocessors - Course Code: EEE522

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 2+2	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Basic elements of microprocessor systems. Instruction formats. Addressing techniques. Assembler language- with examples from microprocessors. Detailed examination of addressing, instruction execution, data representation and program coding and debugging. Design of microprocessor based systems.	
EFFECTS OF EDUCATION PROCESS: Upon successful completion of this course, students will be able to represent information in a digital form, introductory information about PIC microcontrollers, programming basics of 16F84, some introductory projects like LED Flasher, Chasing LEDs, etc, be able to write a header program in assembly language, acquire the main programming skills, how to use inputs and outputs, the meaning of analogue to digital conversion, and the usage of interrupts	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektromanyetik Dalga Teorisi - **Course Code:** EEE523

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Wave Equations, Time-varying Electromagnetic Fields, Plane Waves, Polarization	
EFFECTS OF EDUCATION PROCESS: To learn basic information about electromagnetic wave	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektrik-Elektronik Tasarım I - **Course Code:** EEE529

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 2	ECTS TYPE: ECTS (3)
SEMESTER: Fall	CLASS LEVEL: 3rd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: The aim of this course is to make research about the topics of electrical and electronics engineering and design the graduation project.	
EFFECTS OF EDUCATION PROCESS: To make electrical-electronic project design	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Project	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Kontrol Mühendisliği - **Course Code:** EEE623

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (6)
SEMESTER: Spring	CLASS LEVEL: 3rd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Mathematical models of systems. Models with state variables: Graphical state models with signal flow. Characteristics and performance of feedback control systems. Stability of linear feedback systems: Routh-Hurwitz criterion. Root locus method. Frequency response methods: Bode diagram. Stability in the frequency domain: Nyquist criterion.	
EFFECTS OF EDUCATION PROCESS: This course is to enable students to make mathematical modeling of systems. This course also aims to teach control techniques and to interpret the system response.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Haberleşme Mühendisliği - Course Code: EEE621

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3+2	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Basic elements of communication, sampling theorem, Nyquist criterion, modulation types: Pulse amplitude modulation, pulse code modulation, amplitude modulation, phase modulation, quantization, differential pulse code modulation. Baseband Data Transmission: Intersymbol interference, Nyquist channel, band Signal space analysis, error analysis. Types of binary digital modulation: Binary amplitude shift switching, binary frequency and phase shift switching, Data paths; Hamming coding, Huffman coding, OSI layer, LAN / MAN technology.	
EFFECTS OF EDUCATION PROCESS: The course aims to teach the basic concepts of communication, modulation types, analog and digital communication techniques and data communication.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektrik Makineleri - Course Code: EEE625

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 3+2	ECTS TYPE: ECTS (6)
SEMESTER: Spring	CLASS LEVEL: 3rd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Electromagnetic fields generated by AC electrical machine windings: winding and rotating magnetic fields, emf induced in a winding. Induction machines: equivalent circuit, steady-state analysis, speed control. Synchronous machines: equivalent circuit, steady-state analysis, stability. Single phase induction machines. Special electric machines. (Stepper Motors)	
EFFECTS OF EDUCATION PROCESS: The aim of this course is to enable students to compute on magnetic circuits, calculate magnetic forces using magnetic force and Maxwell voltages, define rotating magnetic fields, function of transformer, transmission lines, synchronize. Using the j-method, equivalent circuits and phasor diagrams, the machine can analyze single and three phase power converters, transformers, transmission lines, synchronous machines and one and three phase power electronic converters. Stepping Motors	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Elektrik-Elektronik Tasarım II - **Course Code:** EEE629

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 2	ECTS TYPE: ECTS (3)
SEMESTER: Spring	CLASS LEVEL: 3rd Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: The aim of this course is to make research about the topics of electrical and electronics engineering and design the graduation project.	
EFFECTS OF EDUCATION PROCESS: To make electrical-electronic project design	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Project	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Bitirme Projesi I - Course Code: EEE729

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 2+2	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 4th Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
<p>CONTENTS: This is the first course in the senior design project sequence. Emphasis is placed on design team formation, project identification, and production of a feasibility study. An independent study under the supervision of an advisor: Research on exploring and defining a potential study area suitable for a senior design project. Identification of a specific problem from the selected study area in electrical and electronics engineering. Results from this study are documented and presented in the form of a design project proposal and oral presentation including functional and non functional requirements to be implemented and a detailed project tasks plan. Design and implementation of the project. Presentation of the results in both oral and written forms.</p>	
EFFECTS OF EDUCATION PROCESS: This Research Project aims to teach the source research to the students and also improve their presenting skills.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Project	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Bitirme Projesi II - **Course Code:** EEE829

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Mandatory
NUMBER OF HOURS: 2+2	ECTS TYPE: ECTS (3)
SEMESTER: Spring	CLASS LEVEL: 4th Year
LANGUAGE OF INSTRUCTION: Türkçe	
PRELIMINARY REQUIREMENTS: None	
<p>CONTENTS: This is the second course in the senior design project sequence. Emphasis is placed on the completion of a major design project initiated in EEE829. This project should entail task specifications in light of the norms for design by means of engineering analysis and an appropriate prototype focused on primary functionality. Research on exploring and defining a potential study area suitable for a senior design project. Results from this study are documented and presented in the form of a design project proposal and oral presentation including functional and non functional requirements to be implemented and a detailed project tasks plan. Design and implementation of the project. Presentation of the results in both oral and written forms.</p>	
<p>EFFECTS OF EDUCATION PROCESS: To make electrical-electronic project design. This Research Project aims to teach the source research to the students and also improve their presenting skills.</p>	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Project	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Antenna Engineering - Course Code: EEE868

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Antenna theory and equations, Antenna types, Polarization, Antennas in Communication Systems, MPA (Microstrip Patch Antennas), Antenna Simulations and projects.	
EFFECTS OF EDUCATION PROCESS: To teach main theory and applications of commercial antennas.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Numerical Methods for EEE - **Course Code:** EEE872

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Matlab Fundamentals, Modeling and Error Analysis, Taylor Series, Numerical Differentiation, Roots of Equations, Interpolation, Numerical Integration, Partial Differential Equations.	
EFFECTS OF EDUCATION PROCESS: To teach main applications of computational electromagnetics.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Electromagnetic Compatibility - **Course Code:** EEE770

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Introduction to electromagnetic compatibility, Accrediation, Electromagnetic and Circuit Theory, Noise and Frequency Analysis, Electromagnetic Compatibility Test and Measurement Environments, Electromagnetic Compatibility Test and Measurement Devices, Electromagnetic Compatibility and Protection Methods.	
EFFECTS OF EDUCATION PROCESS: To teach main applications of electromagnetic compatibility	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course.	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Renewable Energy - Course Code: EEE886

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: General information about energy, work, temperature, specific heat of materials and planetary energy sources, energy consumption of internal and external combustion engines, new Technologies. Nuclear energy, chemical analysis of fission, fusion and cold fusion, reactor types. Solar energy, solar panels, their technologies and efficiencies, energy storage devices. Wind energy, conversion methods, efficiency and wind energy map of Turkey. Tidal energy and ocean energy.	
EFFECTS OF EDUCATION PROCESS: To teach main theory and applications of renewable energy sources, their efficiencies, and conversion methods.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Digital Integrated Circuits - **Course Code:** EEE774

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: General information about IC technology, the recent improvements about IC production technologies, Analog and digital ICs, main differences between IC technologies, Digital logic gates, AND, OR, EXOR, INVERTER, MULTIPLEXER, DEMULTIPLEXER, COUNTER, DECODER, ENCODER, COMPARATOR ICs and their common electrical and timing characteristics.	
EFFECTS OF EDUCATION PROCESS: To teach main integrated circuit basics, electrical characteristics and usage areas with practical examples.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Power Electronics - Course Code: EEE748

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Analysis of controlled and uncontrolled rectifier circuits.	
EFFECTS OF EDUCATION PROCESS: This course is to introduce the power diodes, thyristors, uncontrolled and controlled rectifiers, their operation principles, their equivalent circuits, and considering their widespread engineering applications.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Satellite Communications - **Course Code:** EEE864

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: LEO-MEO-GEO Satellites, Orbital Location of satellites, Commercial satellites, DBS, Vsat Applications, Link Budgets, Satellite Vendors (Turksat-Eutelsat-Intelsat)	
EFFECTS OF EDUCATION PROCESS: Satellite Communications and Design Projects	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: High Voltage Techniques - Course Code: EEE840

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Field analysis: experimental and numerical (finite difference, finite element and charge simulation) methods and applications. Electrical breakdown in gases: ionization processes. Townsend's breakdown criterion, Paschen's Law, break-down in electronegative gases, time lags. Streamer-Kanal mechanism, breakdown in non-uniform field and corona. Electrical break-down of liquids: breakdown mechanism of pure and commercial liquids. Electrical breakdown of solids: Intrinsic, electromechanical, thermal and erosion mechanism. Insulating materials: dielectric gases; insulating oils and solid dielectrics.	
EFFECTS OF EDUCATION PROCESS: To teach main theory and applications of high voltage techniques	
LITERATURE (OPTIONAL): High Voltage Engineering, by M.S. Naidu and V. Kamaraju, second edition, NY: McGraw-Hill, (1996).	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Analog CMOS Integrated Circuits - **Course Code:** EEE874

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Integrated-circuit fabrication. Integrated-circuit devices and modeling. Constant-current and voltage sources. Differential amplifiers. Operational amplifier characteristics and applications. IC active filters and switched-capacitor circuits. Voltage comparators and regulators. Current mirrors. Wide bandwidth and video amplifiers. Voltage-controlled oscillators and waveform generators. Phase-locked loops. D/A and A/D converters.	
EFFECTS OF EDUCATION PROCESS: To teach main theory and applications of Analog CMOS Integrated Circuits	
LITERATURE (OPTIONAL): Analysis and Design of Analog Integrated Circuits (4th Edition), Paul R. Gray, Paul J. Hurst, Stephen H. Lewis, Robert G. Meyer, Wiley, (2001).	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Modern Control Theory - Course Code: EEE856

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Background and preview: Highlights of classical control theory, state variables and the state space description of dynamic systems. Vectors and linear vector spaces. Simultaneous linear equations. Eigenvalues and eigenvectors. Functions of square matrices and the Cayley-Hamilton theorem. Solution of continuous and discrete time state equations. Stability. Controllability and observability for linear systems. State space realization of transfer functions. Introduction to optimal control theory and nonlinear control systems	
EFFECTS OF EDUCATION PROCESS: To teach the modern control theory in an advanced level	
LITERATURE (OPTIONAL): Modern Control Theory, by William L. Brogan, Prentice Hall, (1990)	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Wireless Communication - Course Code: EEE764

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: The fundamentals of wireless channels and channel models, wireless communication techniques, and wireless networks. Statistical models for time-varying narrow band and wide band channels, fading models for indoor and outdoor systems, macro- and micro-cellular system design, channel access and spectrum sharing using TDMA, FDMA, and CDMA, time-varying channel capacity and spectral efficiency, modulation and coding for wireless channels, antenna arrays, diversity combining and multi-user detection, dynamic channel allocation, and wireless network architectures and protocols.	
EFFECTS OF EDUCATION PROCESS: To teach main theory and applications of wireless communication systems	
LITERATURE (OPTIONAL): Fundamentals of Wireless Communication, by David Tse and Pramod Viswanath Cambridge University Press, (2005)	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Electrical Distribution Systems - **Course Code:** EEE786

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Basic considerations. Load characteristics and forecasting methods. Distribution substations. Subtransmission, primary and secondary distribution. Choice of voltage levels. Operational characteristics of cables, aerial lines and transformers. System voltage regulation. Power factor correction. Fusegear, switchgear, current and voltage transformers. Overcurrent and thermal protection. Earthing methods. Economics of distribution systems.	
EFFECTS OF EDUCATION PROCESS: The course aims to teach the general electrical distribution systems and subsystems on three phase systems.	
LITERATURE (OPTIONAL): Electric Power Distribution System Engineering, by Turan Gönen, McGraw-Hill Publishers, (1986)	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Medical Imaging - Course Code: EEE782

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: X-Ray imaging: Radiography/mammography, fluoroscopy. CT: Operational modes, the CT gantry, image reconstruction, spiral CT, special imaging techniques, image quality, image artifacts, radiation safety, quality control. MRI: Concepts of magnetic resonance, principles of magnetic resonance imaging, pulse sequences, measurement parameters and image contrast, additional sequence modifications, artifacts, motion artifact, reduction techniques, MR angiography, advanced imaging applications, MR spectroscopy, instrumentation, contrast agents, clinical protocols. PET Scan. Ultrasound scan: The nature of diagnostic ultrasound, ultrasound interaction with tissue, ultrasound power and intensity, the ultrasound beam, the ultrasound imager, doppler ultrasound, ultrasound image artifacts, ultrasound quality control, biologic effects of ultrasound. IR scan.	
EFFECTS OF EDUCATION PROCESS: To teach main theory and applications of medical imaging subjects.	
LITERATURE (OPTIONAL): Medical Imaging Signals and Systems, by Prince and J. M. Links, Prince and J. M. Links Pearson Prentice-Hall, (2006).	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Process Control - **Course Code:** EEE854

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Introduction to process control. Analog and digital signal conditioning. Sensors: Thermal, mechanical, optical. Final control: Industrial electronics, actuators, control elements. Discrete-state process control: Relay controllers and ladder diagram, PLCs. Controller principles: Control system parameters, controller modes. Analog controllers. Digital control: Computers in digital control, process-control networks. Control-loop characteristics.	
EFFECTS OF EDUCATION PROCESS: This course aims to teach methods and procedures to safely work around process systems.	
LITERATURE (OPTIONAL): Process Dynamics and Control, by D.E. Seborg, T.F. Edgar, D.A. Mellichamp, 2nd Edition, John Wiley & Sons, (2004)	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Microwave Engineering - Course Code: EEE768

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Transmission Lines, Smith Chart, Single stub Tuning, Double Stub Tuning, Microwave Applications, Couplers, Filters, Antennas.	
EFFECTS OF EDUCATION PROCESS: To have a basic understanding of microwave devices and applications	
LITERATURE (OPTIONAL): Microwave Engineering, by D. M. Pozar, John Wiley & Sons, Latest (3rd) Edition, (2005).	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Independent Study II - **Course Code:** EEE449

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Independent Study	
EFFECTS OF EDUCATION PROCESS: The aim of this course is to make students learn and conduct independent research on electrical and electronics engineering topics of interest.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Independent Study I - **Course Code:** EEE349

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Fall	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Independent Study	
EFFECTS OF EDUCATION PROCESS: The aim of this course is to make students learn and conduct independent research on electrical and electronics engineering topics of interest.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Introduction to Micro-Electromechanical Systems - **Course Code:** EEE888

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Introduction to MEMS, Introduction to basic techniques used in micro production, Mechanical and electrical properties of MEMS materials, Embedded systems used in MEMS, Micro movements and transmission, Basic mechanical sensors, Use of various micro-mechanical sensors, Micro actuators, Micro flows, Force and pressure sensors, Current, acceleration and angular change sensors, Electronic connection interfaces, MEMS used in medical applications, Prototyping and modeling	
EFFECTS OF EDUCATION PROCESS: Introduction to the basic techniques used in micro-sensors production, The use of various micro-mechanical sensors, working principles and production techniques.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Opto Electronics - Course Code: EEE878

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Review of physics of optoelectronic devices. Heterostructures. Optical absorption, emission and refraction processes. Junction theory. Light emitting diodes. Laser diodes. Photodetectors. Modulators. Photonic switches. Integrated photonic devices. Innovative optoelectronic devices.	
EFFECTS OF EDUCATION PROCESS: To understand the main concepts of quantum mechanics and semiconductor physics, to design semiconductor devices considering the optical performance of the systems.	
LITERATURE (OPTIONAL): Semiconductor Optoelectronic Devices, P. Bhattacharya, Prentice Hall	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Telecommunication Electronics - **Course Code:** EEE870

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Nonlinear controlled sources: piece-wise linear, square law, exponential and differential pair characteristics. Low level amplitude modulation and analog multiplication. Nonlinear loading of tuned circuits. Sinusoidal oscillators. Frequency mixers. High level amplitude modulation techniques	
EFFECTS OF EDUCATION PROCESS: To introduce the basic principles behind modern communication systems, to learn concepts of designing RF circuits, high frequency amplifiers and mixers.	
LITERATURE (OPTIONAL): The design of CMOS Radio- Frequency Integrated Circuits, Lee, Thomas H., 2004, Cambridge University Press	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Illumination Techniques and Indoor Installation - **Course Code:** EEE844

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Design and drawing of Light, Light Sources / Indoor Lighting Design / Weak Current and High Current installations.	
EFFECTS OF EDUCATION PROCESS: To provide the students with the appropriate lighting techniques and design methods to be used indoors and to prepare projects in accordance with the legislation, including lighting, weak and strong current installations.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Machine Drive Systems - Course Code: EEE846

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Elements of electric drive systems. Introduction to solid state devices. Introduction to solid state switching circuits. Controlled rectifiers for DC motors. Chopper drives for DC motors. Induction motor drives and synchronous motor drives.	
EFFECTS OF EDUCATION PROCESS: This course teaches the basic principles of drive systems for DC and AC electric motors by introducing the characteristics of electrical, mechanical, and electronic components of the drive systems considering the widespread engineering applications.	
LITERATURE (OPTIONAL): Fundamentals of Electric Drives, Mohamed A. El-Sharkawi	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Course Name: Labview Programming - Course Code: EEE890

FACULTY: Faculty of Engineering	CLASS TYPE: Bachelor/Elective
NUMBER OF HOURS: 3	ECTS TYPE: ECTS (5)
SEMESTER: Spring	CLASS LEVEL: 3rd and 4th Years
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Introduction: Programming examples, Vehicle Palette, Control Palette, Function Palette, Data Types, Conversion, Indicator / Control / Fixed Creation, Basic Programming: Indicators, Controls, Math Operations, Logic Structures, Arrays, Characters. Structures: Comparison Structures, State Structures, Sequence Structures, Local Variables, Loops: For Loop, While Loop, Floating Registers, Indexing, Sets: Sequences (continued), Matrices, Rings, Sets, Merge / Decomposition. Debugging and Sub-Virtual Instruments: Measuring Tip, Cutting Points, Stepping, Highlighting, Modular Programming, Advanced Topics: Character Arrays, Comparison Structures and Data Types, Data Input / Output: Reading from File and Writing to File, File Location, Data Retrieval, Scheduling, Graphic Creation. Data Acquisition (VT): Hardware connectivity, VT virtual instruments, GPIB interface, exercises to communicate with measuring devices via GPIB.	
EFFECTS OF EDUCATION PROCESS: Students will be able to perform computer-controlled experiments that may be required in their work, to collect data and analyze these data to develop the ability to develop Labview applications.	
LITERATURE (OPTIONAL): LabVIEW for everyone: graphical programming made easy and fun/ Jeffrey Travis, James Kring. -3rd edition, published by Prentice Hall, 2007.	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	