Erciyes University, Faculty of Engineering

Department of Electrical and Electronics Engineering

Closed Course Contents From 2014-2015 Academic Year

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
EM 102	Basics of Electrical Circuits	2	0	2	
Course Description:					
Basic Concepts, basic quantities, circuit elements, sources. Resistive circuits, Ohm's and Kirchhoff's Laws, Single loop and node-pair circuits, circuits with series-parallel combinations of resistors, circuits with dependent source. Nodal and Loop Analysis Techniques, circuit with operational amplifiers, Tellegen's theorem. Additional Analysis Techniques, Circuit Theorems: Linearity, Superposition, Source transformation and Thevenin's and Norton's theorems, Maximum Power Transfer, Sensitivity Analysis. Capacitors. Inductors,Capacitors and Inductors combinations.					

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
EM 103	Computer Aided Technical Drawing	2	0	2	
Course Description:					
Introduction to drawing tools and using of them. Figure and norms write applications. Drawing tools of Analog and digital circuits symbols. Analog and digital electronic circuits' drawing with tools drawing. Computer drawing programs to draw electronic circuits.					

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
EM 104	Material Knowledge for Electrical Engineers	2	0	2	
Course Description:					
Investigating of electronic properties of Insulating and conducting materials of the (atomic structure, crystal bond structure, electrical, mechanical, magnetic, thermal, chemical and optical). Noises on resistance (white noise, thermal noise, potential noise, etc..), Skin effect and investigating of the approach effects. Types of resistors, capacitors and inductors. Coding technique. Printed circuit board assembly techniques and examination of PCB testing techniques.					

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
EM 106	Electrical Measurement	2	0	2	
Course Description:					
Basic physical sizes and international standards. Fundamentals of electrical measurement. Basic measurement techniques. Principles of analogue measurement equipments. Evaluation of the measurement results and measurement errors. DC bridges and applications, Wheatstone bridges, Kelvin bridges. AC bridges and basic applications. Fundamentals of oscilloscopes.					

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
MAT 104	Linear Algebra	2	0	2	
Course Description:					
Matrices, determinants and linear equations system. Vector spaces. Eigenvalues and eigenvectors. Diagonalization, accurate and planes in three-dimensional space. Basic surfaces, cylindrical surfaces, quadric surfaces.					

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
EM 216	Electromagnetic Field Theory I	2	0	2	
Course Description:					
Sources of electromagnetic fields and fundamental postulates of electrostatics in free space. Coulomb's Law. Electrostatic fields of discrete and distributed charges. Gauss' Law and electric potential. Conductors and dielectrics in electrostatic fields. Electric flux density and dielectric constant. Boundary conditions. Capacitance and capacitors. Electrostatic energy and forces. Poisson's and Laplace's Equations, method of image charges. Solution of electrostatic problems: Poisson's and Laplace's Equations, method of image charges. Steady electric currents: Point forms of Ohm's, Kirchhoff's and Joule's Laws.					

Term	Autumn				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
EM 317	Electromagnetic Field Theory II	3	0	4	4
Course Description:					
Fundemental Postulates of Magnetostatics in Free Space. Amper's circuital Law and Applications. Wector magnetic Potantional. The Biot-Sawart Law and Applications. Magnetization and Equivalent Current Densities and Magnetic Field intensity and Relative Permiability. Behavior of Magnetic Materials and Boundary Conditions for Magnetostatic. Magnetic Energy. Time variying fields and Maxwell's equations introduction. .					

Term	Autumn				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
EM 315	Introduction to Microprocessors	2	0	2	
Course Description:					
Structural Properties of Microprocessors. Basic CPU Signals, Development of the Microprocessors. PC Data Buses, CPU Design Architectures. Memory Unit and Memory Organization. Arithmetic Logic Unit, General Properties of Registers and Counters. Control Unit, Input-Output (I/O) Units. 8085 CPU Family, Machine Cycle and Timing Diagrams. Structures of the 8085 CPU Instructions and Their Classifications. Basic Instructions and Programming. Data Transfer, Programming with Arithmetic and Logic Instructions. Loops, Counter and Delay Operations. Stack Operations, Subroutines, Code Conversion, BCD Arithmetic. Overview of the Microcontrollers					

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
YD 302	English for Business	2	0	2	
Course Description:					
Descriptions of basic terms and components of computer system technologies. Discussions on computer system technologies. Programming. Application Software. Operating Systems. Computer Security. Importance of communication for success. Importance of archives. Problem solving. Scientific meetings. Various technical reports. Writing technical reports, Letters. Letter formats. Seminars.					

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
SB 390	Quality Management and Standarts	2	0	3	3
Course Description:					
Basic information about the quality. Quality costs. TS-EN-ISO 9000 Quality Management System (2000 Version). Total Quality Management (TQM). Case studies.					

Term	Autumn				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
SB 493	Law of Trade	2	0	3	3
Course Description:					
Ticari işletme hukuku: Ticari işletme, tacir ve tacir sıfatının sonuçları, ticaret ünvanı ve diğer ticari adlar, ticaret sicili, haksız rekabet, ticari defterler, cari hesap ve tacir yardımcıları. Şirketler hukuku: Şirket kavramı ve adi şirketler, kollektif, komandit, anonim ve limited şirketler.					

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
EM 478	Industrial Control Tecniques Laboratory	1	1	3	3
Course Description:					
SIMATIC S7-200 controller. Basic commands. Timers and counters. Comparison operations. CNCs.					

Term	Spring				
Code	**Course Title**	**T**	**P**	**K**	**ECTS-Cr**
EEM 492	Statistics	2	0	3	3
Course Description:					
Collection and arrangement of data, means and distribution measures, kinds of index, statistical inference, hypothesis tests, regression and correlation analysis.					