



**KTO KARATAY
ÜNİVERSİTESİ**

KTO KARATAY UNIVERSITY VOCATIONAL SCHOOL OF TRADE AND INDUSTRY

ERASMUS+ Course Catalogue

for the academic year 2019/2020 Spring Semester

(ALPHABETICAL) LIST OF COURSES WITH CODES

Algorithms and Programming- **MEK107**

Alternating Current (AC) Circuit Analysis– **MEK106**

Analog Electronics– **MEK104**

Basic Manufacturing Processes– **MEK112**

Computer Aided Drawing-**MEK109**

Computer Aided Machine Tools - **MEK110**

Digital Electronics-**MEK108**

Direct Current (AC) Circuit Analysis– **MEK105**

Fundamentals of Mechatronics– **MEK101**

Measurement Techniques– **MEK103**

Course Name: Fundamentals of Mechatronics- **Course Code:** MEK101

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 4+0	ECTS TYPE: ECTS (4)
SEMESTER: Fall	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Basic Energy Concepts, Mechatronic Systems, Mechatronic System Elements and Their Qualifications, Mechanical Systems, Material Knowledge, Electrical Systems	
EFFECTS OF EDUCATION PROCESS: The aim of this course is to teach mechanics, energy and materials knowledge, to analyze mechatronic systems, to follow the application areas of mechatronics and to use the scientific foundations of mechatronics.	
LITERATURE (OPTIONAL): Musa Jouaneh, “Fundamentals of Mechatronics”, Cengage Learning, 2012.	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT): Sadık Ata, sadik.ata@karatay.edu.tr	

Course Name: Direct Current (DC) Circuit Analysis- **Course Code:** MEK105

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (4)
SEMESTER: Fall	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Basic concepts, resistor, Ohm's Law, power, energy, Kirchhoff's Current Law, Kirchhoff's Voltage Law, Serie and parallel connected resistors, Nodal analysis, Mesh analysis, Superposition, Source Transformation, Thevenin's and Norton's Theorem, Maximum power transfer, Capacitors and Inductors, First-order circuits (RL and RC circuits).	
EFFECTS OF EDUCATION PROCESS: Students will be familiar with the theoretical background of direct current (DC) circuit analysis, and they will learn how to implement these components.	
LITERATURE (OPTIONAL): Charles K. Alexander and Matthew N. O. Sadiku, "Fundamentals of Electric Circuits", 4 th Edition, McGraw-Hill.	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Laboratory, Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT): Adem Yilmaz, adem.yilmaz@karatay.edu.tr	

Course Name: Measurement Techniques - **Course Code:** MEK103

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 2+1	ECTS TYPE: ECTS (2)
SEMESTER: Fall	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Basic principles of measurement, types of measurement errors, calculations of measurement error. To learn the working principles of measuring instruments. To be able to measure electrical, electronic and mechanical quantities.	
EFFECTS OF EDUCATION PROCESS: The course aims to teach the basic principles of measurements.	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Laboratory, Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT): Adem Yilmaz, adem.yilmaz@karatay.edu.tr	

Course Name: Algorithms and Programming - **Course Code:** MEK107

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (4)
SEMESTER: Fall	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
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 Programming Language and Algorithms.	
LITERATURE (OPTIONAL): Brian W Kernighan-Dennis M. Ritchie, C Programming Language, Pearson Edition, 1988	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Laboratory, Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT): Mustafa Sami Kaçar, msami.kacar@karatay.edu.tr	

Course Name: Analog Electronics - **Course Code:** MEK104

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (3)
SEMESTER: Spring	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Semiconductors, Diodes, Diode applications, Zener Diodes and its applications, OPAMPs and its applications, Basic single-state transistor amplifiers and frequency responses, Power amplifiers.	
EFFECTS OF EDUCATION PROCESS: Students will be familiar with the theoretical background of electronics components, and they will learn how to implement these components.	
LITERATURE (OPTIONAL): Robert L. Boylestad and Louis Nashelsky, “Electronic Devices and Circuit Theory”, 11 th Edition, Pearson Education.	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Laboratory, Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT):	

Course Name: Alternating Current Circuit Analysis - **Course Code:** MEK106

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (3)
SEMESTER: Spring	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Sinusoids and Phasor, Impedance and Admittance, Nodal Analysis, Mesh Analysis, Superposition Theorem, Thevenin and Norton Equivalent Circuits, AC Power Analysis, Apparent Power and Power Factor, Three-Phase Circuits.	
EFFECTS OF EDUCATION PROCESS: Students will be familiar with the theoretical background of alternating current (AC) circuit analysis, and they will learn how to implement these theories in practice.	
LITERATURE (OPTIONAL): Charles K. Alexander and Matthew N. O. Sadiku, “Fundamentals of Electric Circuits”, 4 th Edition, McGraw-Hill.	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Laboratory, Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT): Adem Yilmaz, adem.yilmaz@karatay.edu.tr	

Course Name: Digital Electronics- **Course Code:** MEK108

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (4)
SEMESTER: Spring	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Number Systems-Codes, Boolean Algebraic and Logic Gates, Logical Functions and Simplification Techniques, Combinational Logic Circuits, Arithmetic Operations-Circuits, Multifunctional Circuits, Code Converters-Encoders, MUX and DEMUX Circuits, Flip-Flops-Data Loggers, Synchronous Counter Circuits, Asynchronous Counter Circuits, Special Counter Circuits, Counter Circuits-Applications, Slider Recorders	
EFFECTS OF EDUCATION PROCESS: Using Logic Circuits and Systems to Open the Door to the Digital World	
LITERATURE (OPTIONAL): M. Morris Mano, “Digital Design”, Global Edition, Pearson, 2018	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Laboratory, Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT): Mustafa Sami Kaçar, msami.kacar@karatay.edu.tr	

Course Name: Computer Aided Machine Tools - **Course Code:** MEK110

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (3)
SEMESTER: Spring	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Recognition of the structure of CNC lathes, preparing CNC lathe work, writing programs and making production	
EFFECTS OF EDUCATION PROCESS: To introduce the principles of conventional and modern manufacturing methods. To be able to transfer the technical information to the students who can choose the most suitable method for manufacturing. Understands the basic concepts of machining and non-machining manufacturing methods and allows the selection of the most appropriate manufacturing method	
LITERATURE (OPTIONAL): PROF. DR. MUSTAFA AKKURT - BİLGİSAYAR DESTEKLİ TAKIM TEZGAHLARI (CNC) VE BİLGİSAYAR DESTEKLİ TASARIM VE İMALAT (CAD-CAM) SİSTEMLERİ	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT): Haşmet Çağrı SEZGEN, haşmet.sezgen@karatay.edu.tr	

Course Name: Basic Manufacturing Processes - **Course Code:** MEK112

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 3+0	ECTS TYPE: ECTS (3)
SEMESTER: Spring	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Introduction to manufacturing processes and basic concepts / Casting principles and methods / Machining principles and methods / Machining principles and methods / Joining principles and methods.	
EFFECTS OF EDUCATION PROCESS: Technology, production and manufacturing concepts, casting, chip (plastic) forming, machining and joining methods and principles, applications and manufacturing methods to provide information about.	
LITERATURE (OPTIONAL): R.C.S. Mehta, N.S. Gaira, “Basic Manufacturing Processes: Theory and Practice”, MV Learning, 2018.	
TEACHING METHODS: Verbal course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT): Sadık Ata, sadik.ata@karatay.edu.tr	

Course Name: Computer Aided Drawing - **Course Code:** MEK109

FACULTY: Vocational School of Trade and Industry	CLASS TYPE: Mandatory
NUMBER OF HOURS: 3+1	ECTS TYPE: ECTS (3)
SEMESTER: Fall	CLASS LEVEL: 1 st Year
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Comparison of traditional drawing and computer aided drawing / Introduction of software and hardware / Drawing / Editing / Dimensioning / Settings / Views / Sections / Assembly drawings and adjustments	
EFFECTS OF EDUCATION PROCESS: The course aims to provide the students with the ability to make technical drawings and create solid models by using computer aided design.	
LITERATURE (OPTIONAL): KEMAL TÜRKDEMİR - TEKNİK RESİM 1	
TEACHING METHODS: Verbal and applied course	
ASSESSMENT METHODS: Midterm Exam and Final Exam	
LECTURER (NAME, EMAIL CONTACT): Haşmet Çağrı SEZGEN, haşmet.sezgen@karatay.edu.tr	