



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221911001	Turkish Language I				
Semester	Code	Name	T+P	Credit	ECTS
1	221911001	Turkish Language I	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Instructor Mehmet Ali Dinçay	None

The aim of lesson :

To teach the properties of the language, to teach the historical periods of Turkish, to enable the learners to understand the vocal and and structural properties of Turkish and use the punctuation well.

Course Contents :

Historical of Turkish language, our language phonology and morphology, the types of words, rules of spelling and punctuation, expression abnormalities.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221911020	Occupational Health and Safety I				
Semester	Code	Name	T+P	Credit	ECTS
1	221911020	Occupational Health and Safety I	2	2	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Ahmet Cihangir YALINKILIÇ acihangir.yalinkilic@dpu.edu.tr	None

The aim of lesson :

Explaining the rules underlying the occupational health and safety law that came into force in 2012 during the European Union harmonization process to students and preparing them for working life.

Course Contents :

Teaching occupational health and safety rules to prevent material and moral damage to employees in working life and to increase productivity.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221911005	Mathematics I				
Semester	Code	Name	T+P	Credit	ECTS
1	221911005	Mathematics I	4	4	5

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Instructor MUSTAFA ŞAHİN	None

The aim of lesson :

To get the students to have the abilities.

Course Contents :

Numbers, Complex numbers. Polynomials and Equations, Trigonometry, Hyperbolic functions, Equations of lines and circles, Equations with exponents and logarithms.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221911021	Physics I				
Semester	Code	Name	T+P	Credit	ECTS
1	221911021	Physics I	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Prof. Dr. Semra DURMUŞ ACER	Prof. Dr. Semra DURMUŞ ACER	None

The aim of lesson :

It is aimed to help students gain the fundamental knowledge of mechanics, statics and dynamics during their engineering education

Course Contents :

Physics and measurement, Motion in one dimension, Vectors, Motion in two dimension, Rules of Motion, Circular Motion, Work and Kinetic Energy, Potential Energy and Conservation of Mechanical Energy, Linear Momentum and Collisions, Rotation of a Rigid Body



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221911009	Chemistry				
Semester	Code	Name	T+P	Credit	ECTS
1	221911009	Chemistry	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Instructor RECEP ÜLKER recep.ulker@dpu.edu.tr	None

The aim of lesson :

To ensure that the basic principles and properties of chemistry are understood, to interpret the resulting qualitative and quantitative results, and to establish a relationship between chemistry and current events.

Course Contents :

Atoms, Molecules and Ions, Stoichiometry, Solutions and Solution Reactions, Gases and Gas Laws, Electron Structure of Atoms and the Periodic System, Chemical Bonds, Physical Properties of Solutions, Chemical Kinetics, Chemical Equilibrium, Chemical Balance, Acids and Bases, Acid-base and solubility balances, Redox Reactions and Electrochemistry.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221911022	Technical Drawing				
Semester	Code	Name	T+P	Credit	ECTS
1	221911022	Technical Drawing	4	3	5

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Hakan MUMCU	None

The aim of lesson :

To provide basic technical drawing rules. To understand drawing techniques of standard machine elements and manufacturing drawings used in the general machinery profession

Course Contents :

Technical drawing vehicles and equipment, line meanings, technical writing, principles of dimensioning, projection principle, views, views drawing, auxiliary views, sectional views, perspective drawings, surface processing symbols. Technical drawing and assembly drawing of machine elements. Assembly drawings from part drawings. Part drawings obtained from assembly drawings.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221911023	Basic Computer Sciences				
Semester	Code	Name	T+P	Credit	ECTS
1	221911023	Basic Computer Sciences	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Hakan MUMCU	None

The aim of lesson :

By giving information to students about basic concepts of computer science and its technological developments, to prove their understanding on fundamentals of computer technology.

Course Contents :

Hardware, operating systems, network and internet, Ms Word, Ms Excel, Ms PowerPoint, Ms FrontPage.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221911015	Introduction to Mechanical Engineering				
Semester	Code	Name	T+P	Credit	ECTS
1	221911015	Introduction to Mechanical Engineering	2	2	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None

The aim of lesson :

To train students about history of manufacturing engineering, sub-disciplines of mechanical engineering, skills necessary for a degree in manufacturing engineering and curriculum, and career opportunities in mechanical engineering.

Course Contents :

History of mechanical engineering, its areas of interest and its relationship with the other engineering disciplines. Sub-disciplines of mechanical engineering, design, materials, mechanical and thermal sciences.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

YDS001	Foreign Language Group of Elective Course I				
Semester	Code	Name	T+P	Credit	ECTS
1	YDS001	Foreign Language Group of Elective Course I	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	None	None

The aim of lesson :

Course Contents :



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
1	221911003	English I	2	2	2
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Associate Prof. Dr. Dilşah KALAY dilsah.kalay@dpu.edu.tr	None	

The aim of lesson :

The aim of this course is to help students improve their basic English language skills—reading, writing, listening, and speaking—and enable them to use English effectively in daily communication contexts. The course also focuses on enhancing students' understanding of fundamental grammar structures, vocabulary, and pronunciation.

Course Contents :

The course covers basic grammar structures, essential vocabulary, short dialogues, everyday expressions, and simple written texts. It aims to develop the four basic language skills (reading, writing, listening, and speaking) in a balanced way.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
1	221911025	German I	2	2	2
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Instructor Fatma DEMİREZEN	None	

The aim of lesson :

The aim of this course is to improve students' German language skills at the beginning level.

Course Contents :

At the end of this course, students can express themselves at the beginning level. They also learn greeting and introduction dialogues, to talk about their families, to count numbers (0-100), to have telephone conversations and to fill in forms, descriptive and determinative adjectives, to talk about meals, food, shopping and to give orders. In addition, students are introduced to German culture/geography by teaching basic German grammar rules.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
2	KP2219101	Career Planning	2	2	2
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Required	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Prof. Dr. Sait Dündar SOFUOĞLU	None	

The aim of lesson :

With the creation of career awareness in the early period of higher education, it will be more possible for students to be employed in fields suitable for their education and abilities. Among the objectives of the course are to raise awareness of our university youth about the expectations and dynamics of business life, to develop skills related to the personal and professional development of the students, and to provide the highest benefit from the education they will receive. The main purpose of the Career Planning Course is; to create career awareness, to ensure that students have information about different sectors, to recognize the tools they can use for their own development, and to direct them to the areas where they will be most productive and happy.

Course Contents :

Within the framework of the draft created by the Presidential Human Resources Office, the Career Planning course will be taught with videos and activities prepared for each week, with guest trainers invited from university lecturers, industry professionals, non-governmental organizations and international organizations. The supportive activities to be included in the course are designed to inform students about the methods and tools used in professional applications and to enable them to use them in the most effective way, and are supported by practical activities. In coordination with career centers, the course will be taught in practice, with activities that provide experience opportunities that will support students to develop their skills.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221912002	Turkish Language II				
Semester	Code	Name	T+P	Credit	ECTS
2	221912002	Turkish Language II	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Instructor Mehmet Ali Dinçay	None

The aim of lesson :

Turkish Language-II class aims to teach the basic rules of written and oral expression to the students.

Course Contents :

Spelling rules and punctuation, expression and expression disorder, composition works and practise.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221912006	Mathematics II				
Semester	Code	Name	T+P	Credit	ECTS
2	221912006	Mathematics II	4	4	5

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Instructor Mustafa ŞAHİN	None

The aim of lesson :

To get the students to have the abilities of mathematics.

Course Contents :

Functions, limit, derivation and its applications, integral and applications of integral.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221912020	Physics II				
Semester	Code	Name	T+P	Credit	ECTS
2	221912020	Physics II	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Prof. Dr. Semra DURMUŞ ACER	Prof. Dr. Semra DURMUŞ ACER	None

The aim of lesson :

It is aimed to help students gain the fundamental knowledge of mechanics, statics and dynamics during their engineering education

Course Contents :

Coulomb Force, Electric Field, Electric Flux, Gauss Law, Electrical Potential, Capacitors, Current Formation and Resistor, Constant Current, Circuits of Direct Current, Kirchhoffs Laws, Magnetic Field, Biot-Savarts Law, Induction, Faradays Law, Lenzs Law



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221912010	Material Science				
Semester	Code	Name	T+P	Credit	ECTS
2	221912010	Material Science	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Prof. Dr. Nurullah Kiratlı	Prof. Dr. Nurullah Kiratlı	None

The aim of lesson :

To teach basic materials science theoretically and experimentally

Course Contents :

Introduction to materials, Kinds of materials, structure-properties-process relationships, Environmental effects on material behavior, atomic bonds, bonds energies, distance among atoms, atomic order



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221912021	Computer Aided Engineering Drawing				
Semester	Code	Name	T+P	Credit	ECTS
2	221912021	Computer Aided Engineering Drawing	4	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Hakan MUMCU	None

The aim of lesson :

Students being able to draw 2D and 3D designs in computer environment.

Course Contents :

Two-and three-dimensional drawings using a CAD program is drawn on computer.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221912022	Occupational Health and Safety II				
Semester	Code	Name	T+P	Credit	ECTS
2	221912022	Occupational Health and Safety II	2	2	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Asist Prof. Ahmet Cihangir YALINKILIÇ	Asist Prof. Ahmet Cihangir Yalinkılıç	None

acihangir.yalinkilic@dpu.edu.tr

The aim of lesson :

Explaining the rules underlying the occupational health and safety law that came into force in 2012 during the European Union harmonization process to students and preparing them for working life.

Course Contents :

Teaching occupational health and safety rules to prevent material and moral damage to employees in working life and to increase productivity.



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Mechanical Engineering

221912023	Machine Tools				
Semester	Code	Name	T+P	Credit	ECTS
2	221912023	Machine Tools	6	5	6
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Required	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None	

The aim of lesson :

The general aim of this course is; The aim is to provide students with basic machining information and explain in detail the processes of using hand tools, drilling, turning, milling and grinding.

Course Contents :

Used in machining; hand tools, drill, shaper, etc. introduction of machine tools; Use of cutters and tools. Operation types and cutters used in these machines. Sharpening drills and lathe tools.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221912004	English II				
Semester	Code	Name	T+P	Credit	ECTS
2	221912004	English II	2	2	2
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Instructor M. SEÇKİN BACAĞ	Associate Prof. Dr. DİLŞAH KALAY	None	

The aim of lesson :

This course aims to equip students, "European Language Portfolio Global Scale" B1, in English with Basic grammar, Understanding oral production, Speaking interactively, Reading

Course Contents :

English grammar, vocabulary, reading comprehension, oral production and writing skills for students to follow occupational courses



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221912025	German II				
Semester	Code	Name	T+P	Credit	ECTS
2	221912025	German II	2	2	2
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Instructor Fatma DEMİREZEN	None	

The aim of lesson :

The objective of this lesson is to help students to improve German language abilities at beginner level.

Course Contents :

At the end of the lesson, students learn to ask directions, describe furniture and places, count numbers (100-1.000.000), understand adverts, speak about hours, hobbies, time slices, days of week, weather forecast, months and travelling, mention past events and give an appointment.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913001	Atatürk's Principles and the History of the Turkish Revolution I				
Semester	Code	Name	T+P	Credit	ECTS
3	221913001	Atatürk's Principles and the History of the Turkish Revolution I	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Instructor Yılmaz ÇETİNER	None

The aim of lesson :

To teach the importance of the principles of Atatürk through explaining the fundamental principles and benefits of the republic.

Course Contents :

Events, thoughts and principles in the rise and development process of Modern Turkey



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913003	Statics				
Semester	Code	Name	T+P	Credit	ECTS
3	221913003	Statics	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Hakan MUMCU hakan.mumcu@dpu.edu.tr	None

The aim of lesson :

Statics is the foundation for further engineering courses such as Design etc.

Course Contents :

Underlying Basics of Static, Newton's laws, vector and scalar values, two-dimensional and three-dimensional equilibrium, friction.



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Simav Technology Faculty
Mechanical Engineering

221913005	Thermodynamics I				
Semester	Code	Name	T+P	Credit	ECTS
3	221913005	Thermodynamics I	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Mesut YAZICI mesut.yazici@dpu.edu.tr	None

The aim of lesson :

To learn the thermodynamic laws and concepts (work, heat, intrinsic energy, entropy, etc.) and acquire ability to apply some systems to thermodynamic laws.

Course Contents :

The basic concepts of thermodynamics, the state equations, the laws of thermodynamics, thermodynamics systems, the thermodynamics potentials and their application of the simple systems.



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Simav Technology Faculty
Mechanical Engineering

221913007	Differential Equations				
Semester	Code	Name	T+P	Credit	ECTS
3	221913007	Differential Equations	4	4	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Instructor MUSTAFA ŞAHİN	None

The aim of lesson :

To gain the students the differential equation solutions and apply to their own fielt.

Course Contents :

Complete differential equation and integral factors,variable partial equation.homogeny,Linear and Bernoulli differantial equations.High rank homogeny and none homogeny Differantial equations.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913011	Manufacturing Methods				
Semester	Code	Name	T+P	Credit	ECTS
3	221913011	Manufacturing Methods	4	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Associate Prof. Dr. Vedat Taşdemir	Associate Prof. Dr. Vedat Taşdemir	None

The aim of lesson :

To know the types and properties of the manufacturing methods, how to apply these methods, and which methods must be used that the part given the manufacturing drawing.

Course Contents :

The course includes casting, plastic forming methods, structure of metal materials, plastic deformation mechanisms, types of deformation, manufacturing methods such as machining, forging, rolling, extrusion.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913013	Computer Programming				
Semester	Code	Name	T+P	Credit	ECTS
3	221913013	Computer Programming	4	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Hakan MUMCU	None

The aim of lesson :

Purpose of this course is to advance knowledge the students about programming and application

Course Contents :

Introduction to basic computer systems, Computer organization, programming language (Visaul Basic), Algorithm and introduction to programming, Variables and constants, Arithmetic and logical operators, Input/output commands, Control commands, Looping, Arrays,



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Simav Technology Faculty
Mechanical Engineering

221913020	Measurement and Control Techniques				
Semester	Code	Name	T+P	Credit	ECTS
3	221913020	Measurement and Control Techniques	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Associate Prof. Dr. Vedat Taşdemir	None

The aim of lesson :

The objectives of this course are to provide students with a comprehensive background in measurement techniques that can be encountered in the basic field of engineering, to provide the ability to use all available measurement devices and systems, to create the necessary scientific background in the evaluation of measurement data and to teach their use.

Course Contents :

Introduction to Measurement Techniques and Definitions / Metrology and Calibration / Turkish Standards Used in Measurement Techniques / Introduction of Other Foreign Standards, Norms and Rules / Analysis of Experimental Findings / Macro and Micro Geometry Measurements / Dimension, Angle and Area Measurement / Pressure Measurement / Temperature Measurement / Flow Measurement / Level Measurement / Measurement of Thermophysical Properties / Force, Moment and Shaft Power Measurement / Sensors and Basic Physical Characteristics of Sensors / Electrical Measurements in Mechanical Engineering / Sampling and Measurement of Air Pollution.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913022	Engineering Materials				
Semester	Code	Name	T+P	Credit	ECTS
3	221913022	Engineering Materials	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Prof. Dr. Nurullah KIRATLI	None

The aim of lesson :

Introducing the basic properties of engineering materials and the material properties of atomic size Teaching the relationships between physical, metallurgical and mechanical properties in materials Providing an understanding of the basic principles in material selection Contributing to the material selection methodology and correct material selection in the design process of an industrial product.

Course Contents :

Classification of engineering materials Types of steel, cast iron and their uses. Heat treatments of metals and alloys. Non-ferrous metals and their uses. Types, properties and manufacturing methods of ceramic, polymer and composite materials. Selection of materials in engineering design. Damage to materials General engineering materials, selection criteria/methodology and industrial applications.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913023	Optimization Techniques				
Semester	Code	Name	T+P	Credit	ECTS
3	221913023	Optimization Techniques	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None

The aim of lesson :

The aim of this course is to introduce the concept and content of operations research, to introduce the concept of optimization and to teach its basic approaches, and to gain the skills of writing mathematical models for optimization problems and solving these models.

Course Contents :

Operations research concept Fundamentals of optimization Linear programming nonlinear programming



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913024 Sanitary System					
Semester	Code	Name	T+P	Credit	ECTS
3	221913024	Sanitary System	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None	

The aim of lesson :

To provide students with information on clean water, waste water, hot water, fire and rain water installations, building installation locations and sewage systems.

Course Contents :

To design the entire water installation of a building



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913026 Renewable Energy Sources					
Semester	Code	Name	T+P	Credit	ECTS
3	221913026	Renewable Energy Sources	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None	

The aim of lesson :

To elucidate the definition and classification of energy, to demonstrate the position of renewable energy within this framework, and to categorize and examine renewable energy sources in detail.

Course Contents :

To elucidate the definition and classification of energy, to demonstrate the position of renewable energy within this framework, and to categorize and examine renewable energy sources in detail.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913027 Mechanism Technique					
Semester	Code	Name	T+P	Credit	ECTS
3	221913027	Mechanism Technique	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Associate Prof. Dr. Vedat TAŞDEMİR	None	

The aim of lesson :

To introduce the approaches and mathematical models used in kinematic and dynamic analysis of machinery.

Course Contents :

Mechanisms, kinematic diagrams, kinematic chains and mobility. Some basic mechanisms. Kinematic analysis and synthesis of mechanisms Kinematics of gear tooth and cam mechanisms.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221913028	Welded Design and Manufacturing				
Semester	Code	Name	T+P	Credit	ECTS
3	221913028	Welded Design and Manufacturing	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Prof. Dr. Nurullah KIRATLI	None

The aim of lesson :

Undergraduate students ksynsk design and manufacturing, to teach theoretical and practical

Course Contents :

Source Definition, classification of welding, arc welding method, MIG / MAG welding, TIG welding, submerged arc welding method advantages and disadvantages against one another of resources, gas mixture used, resource plan, the weldability of different materials.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914002	Atatürk's Principles and the History of the Turkish Revolution II				
Semester	Code	Name	T+P	Credit	ECTS
4	221914002	Atatürk's Principles and the History of the Turkish Revolution II	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Instructor Yılmaz ÇETİNER	None

The aim of lesson :

To summarize political developments in completed phase of Turkish Revolution and establishment process of new state, Atatürk Revoluitons in the political and social fields

Course Contents :

Events, thoughts and principles in the rise and development process of Modern Turkey



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914004	Strength				
Semester	Code	Name	T+P	Credit	ECTS
4	221914004	Strength	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Hakan MUMCU	None

The aim of lesson :

To introduce basic strength concepts and to demonstrate simple analytical methods for calculating the strength of simple structural elements under various loads.

Course Contents :

In this course, the basic concepts of stress and strain - Description of bars and their strength analysis - Strength analysis under axial loading, torsion and bending - Design criteria are explained.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914006	Dynamics				
Semester	Code	Name	T+P	Credit	ECTS
4	221914006	Dynamics	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Required	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Asist. Prof. Fatih Selim Bayraktar fatih.bayraktar@dpu.edu.tr	Asist. Prof. Fatih Selim Bayraktar fatih.bayraktar@dpu.edu.tr	None	

The aim of lesson :

The aim is to teach students kinetics and kinematics of particle (and system of particles) together with underlying principles of dynamics. The student should gain practical approach to dynamics problems at the end of the course.

Course Contents :

- Basic Concepts - Kinematics of Particle - Normal and Tangential Coordinates - Relative Motion - Kinetics of Particle - Work and Energy - Impulse and Momentum - Conservation of Momentum



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914020	Numerical Analysis				
Semester	Code	Name	T+P	Credit	ECTS
4	221914020	Numerical Analysis	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Required	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Instructor Mustafa ŞAHİN	None	

The aim of lesson :

The aim of this course is to provide students with the algorithmic solution of the engineering problems and the numerical analysis methods used in the solution of linear or nonlinear systems, and the basic competencies related to the realization of these solutions in computer environment with engineering software.

Course Contents :

Numerical analysis and errors, Reminding basic matrix operations, Solution of linear equation systems; Solution of nonlinear equations: Bisection method, regulafalsi method, Simple iteration, Newton-Raphson method, Secant method, Solution of nonlinear equation systems: Simple iteration, Newton-Raphson method, Interpolation methods (Interpolation) methods: Lagrangepolinominterpolation, Newton-difference section method, Curve fitting: least squares linear curve fitting, generalized curve fitting, nonlinear curve fitting, solution of differential equations: Taylor series expansion, Numerical derivative methods: split differences method, central differences method, advanced differences method, Numerical integral methods : Rectangular method, Trapezoidal (trapezoid) direction basis, Simpson methods.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914021	Thermodynamics II				
Semester	Code	Name	T+P	Credit	ECTS
4	221914021	Thermodynamics II	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Required	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Prof. Dr. Semra DURMUŞ ACER	None	

The aim of lesson :

The aim of this course is providing heat and work relations, which are main fields of engineering interests, basics of energy conversion and engineering applications

Course Contents :

Main principles of thermodynamics, measurement methods of pressure and temperature, temperature scales, zeroth law of thermodynamics, Pure substance ,phase-change processes, The ideal gas equation ,Heat and Work



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914022	Computer Aided Design I				
Semester	Code	Name	T+P	Credit	ECTS
4	221914022	Computer Aided Design I	4	3	5

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Hakan MUMCU	None

The aim of lesson :

Students being able to draw solid models, assembly and manufacturing drawings in computer environment.

Course Contents :

Creating of sketches, solid models from sketches, assemblies from solid models by using a CAD program. Creating of manufacturing drawings from solid models or assemblies.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914023	CNC Machine Tools				
Semester	Code	Name	T+P	Credit	ECTS
4	221914023	CNC Machine Tools	4	3	5

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Associate Prof. Dr. Vedat Taşdemir	None

The aim of lesson :

To prepare part programmes according to relevant manufacturing draws appropriate to CNC lathe and milling machines and being able to perform manufacture.

Course Contents :

CNC machines, application areas. Structure of CNC machines. Introduction of the CNC turning centres and programming of them. M and G codes. Turning cycles. Introduction of the CNC turning simulation



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914025	Material Inspection Methods				
Semester	Code	Name	T+P	Credit	ECTS
4	221914025	Material Inspection Methods	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Prof. Dr. Nurullah KIRATLI	Associate Prof. Dr. VEDAT TAŞDEMİR	None

The aim of lesson :

It is aimed to introduce the test systems by providing both theoretical information and practical application on which destructive tests can be used to test materials, these test methods, standards, sample preparation and which properties of materials can be determined.

Course Contents :

Destructive testing methods, tensile testing, fatigue testing, compression testing, notch impact testing, creep testing, bending, folding and torsion tests, fracture mechanisms, fracture toughness, hardness measurement tests



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914026	Casting and Forging Technology						
Semester	Code	Name	T+P	Credit	ECTS		
4	221914026	Casting and Forging Technology	3	3	3		
Education Type	Language	Course Level	Course Internship Status	Type of Course			
Formal Education	Turkish	Faculty	No	Elective			
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants			
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None			

The aim of lesson :

To gain the ability to design suitable parts for casting, design runners and feeders by using basic sciences and technological tools. To understand the casting methods and the differences between them and to be able to choose a method for casting a particular part. To introduce all materials and equipment used in casting. Defines tattoo. Categorizes forging methods.

Course Contents :

Casting introduction, classification Casting part design, Runner, feeder design, Mold materials, properties and molding, Core preparation, Sand mold casting, Gypsum and Ceramic mold casting, Investment casting, Pressure casting, Foam model casting, Wax casting, Continuous casting, Melting and foundry furnaces, Casting alloys. Forging methods, its classification. Forging machines.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221914027	Energy Efficiency Strategy and Action Plan						
Semester	Code	Name	T+P	Credit	ECTS		
4	221914027	Energy Efficiency Strategy and Action Plan	3	3	3		
Education Type	Language	Course Level	Course Internship Status	Type of Course			
Formal Education	Turkish	Faculty	No	Elective			
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants			
Mechanical Engineering		Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None			

The aim of lesson :

With this course; the fundamentals of the energy sector, how structural and strategic changes in the energy sector affect industries and investment decisions will be investigated, the unique dynamics and financialization of energy products in international capital markets will be explained, and the impact of sustainable energy on financial decision-making will be discussed.

Course Contents :

Acquiring knowledge about energy efficiency and energy economics, and being familiar with the legislation



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221915001	Machine Elements I						
Semester	Code	Name	T+P	Credit	ECTS		
5	221915001	Machine Elements I	3	3	4		
Education Type	Language	Course Level	Course Internship Status	Type of Course			
Formal Education	Turkish	Faculty	No	Required			
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants			
Mechanical Engineering		Associate Prof. Dr. Alaattin KAÇAL	Associate Prof. Dr. Alaattin KAÇAL	None			

The aim of lesson :

Analyzing and designing of machine elements in mechanical systems.

Course Contents :

General concepts, stress analysis, fatigue and failure theory, factor of safety, Material selection, riveted, welded and soldered connections, force and moment. Screws, shafts, and keys.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
5	221915003	Engineering Economics	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Hakan MUMCU	None

The aim of lesson :

Do the calculations for basic engineering economy

Course Contents :

Engineering economic decisions, concepts of engineering economics, cash flow diagrams, cash flow charts, linear sloping cash flows, money management, investment principles, net present value analysis, annual equivalent analysis, amortisman account, project cash flows, the effect of inflation project cash flow, renewal decisions, project risks uncertainties, investment alternatives, the comparison of investment alternatives alternative, Break-even point



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
5	221915020	Fluid Mechanics	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Associate Prof. Dr. Semra DURMUŞ ACER	None

The aim of lesson :

To introduce the properties and behavior of fluids and to get students set mathematical model of basic flow types

Course Contents :

Properties of fluids, Fluid statics, Determination of hydrostatic pressure forces acting on submerged surfaces, Fluids in motion, Basic analysis techniques of flows, Dynamics of inviscid incompressible fluids, laminar and turbulent flows



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
5	221915013	Computer Aided Manufacturing I	4	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Associate Prof. Dr. Vedat TAŞDEMİR	None

The aim of lesson :

Ability to perform the necessary machining operations for CNC of any part with a CAD/CAM program.

Course Contents :

Introduction to current CAD/CAM programs. Prismatic and surface machining operations using a CAD/CAM program. 5-axis machining operations. Turning operations. Use of simulation modules in CAD/CAM programs, post definition in CAD/CAM programs, automatic CNC code generation, sending CNC part programs to CNC machines using DNC and RS-232, data transfer to CNC lathe and milling machine control panels, and procedure definition.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221915021	Machine Dynamics				
Semester	Code	Name	T+P	Credit	ECTS
5	221915021	Machine Dynamics	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Required	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Associate Prof. Dr. Vedat TAŞDEMİR	None	

The aim of lesson :

The aim is to provide the ability to analyze the kinematic and dynamic characteristics of mechanisms. In this context, the goal is to teach methods for analyzing the path, speed, and acceleration of machine systems, modeling the static and dynamic forces acting on systems, mass balancing and flywheel calculations, and vibration control, enabling their application in solving complex engineering problems.

Course Contents :

The course covers the analysis of degrees of freedom, position, velocity, and acceleration of mechanisms; static and dynamic force interactions in systems; mass balancing principles; and flywheel calculations for energy management. Furthermore, analytical solutions to dynamic stresses on shafts and the mechanical vibration behavior of single and multi-degree-of-freedom systems form the core content of the course.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221915023	Central Heating And Ventilation				
Semester	Code	Name	T+P	Credit	ECTS
5	221915023	Central Heating And Ventilation	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Mesut Yazıcı mesut.yazici@dpu.edu.tr	None	

The aim of lesson :

This course introduces the basic principles of heating and ventilation systems. Topics include safety, tools and instrumentation, system operating characteristics, installation techniques, efficiency testing, electrical power, and control systems. Upon completion, students should be able to explain the heating and ventilation systems and describe the major components of heating and ventilation system.

Course Contents :

This course covers the topics of heating and ventilation techniques.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221915024	Production Planning and Control				
Semester	Code	Name	T+P	Credit	ECTS
5	221915024	Production Planning and Control	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None	

The aim of lesson :

The purpose of this course is to give the students ability of preparing production plans, programs, schedules and developing and solving inventory models in production organizations.

Course Contents :

General structure of production planning, inventory policies, inventory costs, discounts, lot-sizing in continuous and periodic review with dynamic demand, scheduling problems.



Kütahya Dumlupınar University

Simav Technology Faculty Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
5	221915025	Air Pollution and Control Technologies	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None

The aim of lesson :

The aim of this course is to provide mechanical engineering students with fundamental knowledge about air pollution and control techniques. The course covers topics starting from the formation of air pollution, pollutants, sources, pollutant dispersion, measurement methods, pollution control principles, air quality management, and relevant legislation.

Course Contents :

Learning about air pollution, control techniques, and legislation.



Kütahya Dumlupınar University

Simav Technology Faculty Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
5	221915027	Reverse Engineering and Rapid Prototyping	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Associate Prof. Dr. Vedat Taşdemir	Associate Prof. Dr. Vedat Taşdemir	None

The aim of lesson :

Starting from an existing product, quickly transferring the geometric design information of this product to the computer environment with the help of modern devices. Then, designing a new or similar product by performing the necessary improvements and/or changes. Then, to have information about the production process by using one of the fast manufacturing methods.

Course Contents :

Starting from an existing product, quickly transferring the geometric design information of this product to the computer environment with the help of modern devices. Then, designing a new or similar product by performing the necessary improvements and/or changes. Then, to have information about the production process by using one of the fast manufacturing methods. What is reverse engineering and when it is needed, methods of collecting geometric/topographic data from the product and transferring it to the computer, model definition and improvement in the computer environment, final processing in accordance with the rapid production method and physically producing the final product.



Kütahya Dumlupınar University

Simav Technology Faculty Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
5	221915028	Automatic Control	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist. Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None

The aim of lesson :

Introduction to Automatic Control: System, control and automatic control; variable types (to gain knowledge about input-output, control, disruptive variables)

Course Contents :

Basic definitions and characteristics of Control Systems, Open and Closed Loop Control, Simple Control Modes, P,PI,PID Control, Analysis of physical systems using Laplace, Time response, Signal Flow Diagrams, State equations, Linearization, Adjusting PID Parameters, Stability and criteria, Locus of Roots, Frequency response concept, Modeling and simulation of control systems with MATLAB



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
5	221915029	Natural Gas and LPG Technology	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None

The aim of lesson :

"Definitions, rules, and implementation of project details for natural gas appliances supplied from natural gas distribution networks and installed inside buildings, along with teaching the selection of other installation elements, solving encountered problems, calculating the pipes of the installation, chimney, and ventilation cross-sections."

Course Contents :

Acquisition of the ability to design natural gas installations in buildings



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
5	221915031	Refrigeration	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist. Prof. Mesut YAZICI mesut.yazici@dpu.edu.tr	None

The aim of lesson :

To give the students a comprehensive applications oriented treatment of the vapor compression refrigeration cycle and associated equipment besides basic principles of refrigeration and alternative refrigeration systems.

Course Contents :

This course covers the topics of refrigeration cycles and refrigeration systems.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
5	221915032	Industrial Automation	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Associate Prof. Dr. Vedat Taşdemir	Associate Prof. Dr. Ömer Kasım	None

The aim of lesson :

This course offers students; Routh Hurwitz criterion, control theory, Bode diagrams and to bring stability concept in the system with Nyquist diagrams, the traditional controller design of the package programs teaching controller types and structures (MATLAB) to ensure their implementation is designed with

Course Contents :

The concept of stability in the system, Hurwitz determinants Routh table, Routh Hurwitz criteria and specifications. control theory, Bode diagrams and Nyquist curve. controller concept of systems, structures and types. Ziegler example of the traditional controller design and issue according to Nicholes vibration method MATLAB applications



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221915033	Engines				
Semester	Code	Name	T+P	Credit	ECTS
5	221915033	Engines	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Associate Prof. Dr. Vedat Taşdemir	Associate Prof. Dr. Vedat Taşdemir	None

The aim of lesson :

Due to the wide range of applications of internal combustion engines operated as energy machine in our live, teach the basic knowledge to the students studying Mechanical Engineering about the engine terminology within the scope of the curriculum disclosure of issues such as history, basic concepts, motor cycle calculation, mixture characteristics, combustion, the actual cycle, knock, power calculations and the gas exchange.

Course Contents :

Definitions, Classification, Operating Principle, Motor Cycle Calculation, Combustion, Actual Engine Cycle, Knock, Mixture Formation, Engine Power Calculation.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916020	Heat Transfer				
Semester	Code	Name	T+P	Credit	ECTS
6	221916020	Heat Transfer	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Mesut YAZICI mesut.yazici@dpu.edu.tr	None

The aim of lesson :

Understanding of theory and fundamentals principles of heat transfer science

Course Contents :

This course covers the theory and fundamental principles of heat transfer science.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916021	Electrical and Electronical Knowledge				
Semester	Code	Name	T+P	Credit	ECTS
6	221916021	Electrical and Electronical Knowledge	2	2	2

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. ŞÜKRÜ KİTİŞ sukru.kitis@dpu.edu.tr	None

The aim of lesson :

Giving basic electricity, basic electronics, basic mechatronics information

Course Contents :

Electrical-electronic-mechanical elements, motors, microcontrollers, sensors, control techniques, mechatronic system applications



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916002	Engineering Project Design				
Semester	Code	Name	T+P	Credit	ECTS
6	221916002	Engineering Project Design	2	2	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Hakan MUMCU	None

The aim of lesson :

The aim of this course is to use the knowledge gained in undergraduate education to find a solution to an engineering problem and to realize it as a product.

Course Contents :

Determination of Topics / Formation of Project Groups / Planning and Division of Labor / Resource Research and Literature Review / Classification and Analysis of Resources / Determination of Tools and Methods to be Used / Analysis and Modeling / Design and Verification / Procurement and Application / Experiments and Tests / Analysis and Interpretation of Results / Problems Detection and Resolution / Reporting and Presentation



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916004	Machine Elements II				
Semester	Code	Name	T+P	Credit	ECTS
6	221916004	Machine Elements II	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Associate Prof. Dr. Alaattin Kaçal	Associate Prof. Dr. Alaattin Kaçal	None

The aim of lesson :

Analyzing and designing of machine elements in mechanical systems.

Course Contents :

Springs, axes and shafts Rolling Bearings, Power Transmission, Friction Disks, Spur, Helical, Bevel Gears and Worm Gears, Roller Chain, Flat And V Belts, Couplings, Clutches and Brakes



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916023	Hydraulic Pneumatic				
Semester	Code	Name	T+P	Credit	ECTS
6	221916023	Hydraulic Pneumatic	4	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None

The aim of lesson :

To give information about hydraulic and pneumatic related standard symbols and used elements, to give theoretical and applied information about hydraulic and pneumatic circuit design.

Course Contents :

Basic principles in hydraulics, standard symbols, hydraulic pipes and hoses. Hydraulic pumps, motors and cylinders. Sealing elements, hydraulic valves, hydraulic fluids. Electro-hydraulic systems. Faults and detection in hydraulic systems. Application areas of hydraulics in industry. Hydraulic circuit design and applications. Physical principles in pneumatics. Standard symbols in pneumatics. Pneumatic motors, valves. Hydro-pneumatic. Application areas of pneumatic systems. Fault finding. Electro-pneumatic. System design and installation. Programmable control logic system, its programming and applications.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916024	Air Conditioner				
Semester	Code	Name	T+P	Credit	ECTS
6	221916024	Air Conditioner	4	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None	

The aim of lesson :

Introduction to air conditioning, application areas, basic concepts, temperature and humidity concepts, Sensible and latent heats of humid air, Psychrometric Diagram and various air changes, Adiabatic humidification, Mixtures and their representation on a diagram, Heating and cooling processes and their representation on a diagram, Summer and winter air conditioning cycles and their representation on a psychrometric diagram.

Course Contents :

Introduction to air conditioners and air conditioning systems, their use in heating-cooling applications and reinforcement of knowledge with sample applications



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916025	Computer Aided Manufacturing II				
Semester	Code	Name	T+P	Credit	ECTS
6	221916025	Computer Aided Manufacturing II	4	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Prof. Dr. Alaattin KAÇAL	Prof. Dr. Alaattin KAÇAL	None	

The aim of lesson :

Students being able to perform machining operations of any part for CNC using a CAD/CAM package.

Course Contents :

C-axis turning operations. Mill-turn operations. Multi-axis operations. Feature based CAM applications. DNC systems and operating principles. Sending application of the CNC part programmes to CNC machines.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916027	Modern Manufacturing Methods				
Semester	Code	Name	T+P	Credit	ECTS
6	221916027	Modern Manufacturing Methods	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Yakup YILDIZ	None	

The aim of lesson :

The aim of this course is to introduce the students nontraditional manufacturing processes and advanced applications in traditional manufacturing processes.

Course Contents :

Modern applications in traditional manufacturing processes (Minimum quantity lubrication (MQL) technology, Cryogenic cooling technology), mechanical nontraditional manufacturing processes, thermal nontraditional manufacturing processes, chemical and electro chemical nontraditional manufacturing processes, hybrid nontraditional manufacturing processes



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916028	Wind Energy Technology				
Semester	Code	Name	T+P	Credit	ECTS
6	221916028	Wind Energy Technology	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Mesut YAZICI mesut.yazici@dpu.edu.tr	None	

The aim of lesson :

To introduce wind energy and its use, To evaluate the wind energy potential with parametric and statistical methods. To explain aerodynamic behavior of wind turbines and developments in the overall design techniques

Course Contents :

This course covers wind energy and the technology of wind energy systems.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916029	Statistics				
Semester	Code	Name	T+P	Credit	ECTS
6	221916029	Statistics	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Prof. Dr. Nurullah Kiratlı	None	

The aim of lesson :

During the course, students learn definition of statistics, probability, variations, and regressions. This course emphasizes on statistical approach to problem solving.

Course Contents :

Data analysis, probability, probability distribution, confidence intervals, hypothesis testing, Regression Analysis, Anova.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916031	Sheet Metal Forming				
Semester	Code	Name	T+P	Credit	ECTS
6	221916031	Sheet Metal Forming	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Associate Prof. Dr. Vedat TAŞDEMİR	None	

The aim of lesson :

The objective of this course is to introduce students to the fundamental principles of sheet metal forming processes, the types of dies used, and design principles. Students will acquire the skills to perform calculations for cutting, punching, bending, deep drawing, and progressive dies, select appropriate die materials, and develop solutions to production problems encountered in sheet metal forming processes.

Course Contents :

Classification of sheet metal forming processes; design and calculation principles of cutting, punching, bending, deep drawing and progressive dies; die elements, material selection, surface treatments, die assembly and occupational safety.



Kütahya Dumlupınar University

Simav Technology Faculty Mechanical Engineering

221916032	Solid Waste Management				
Semester	Code	Name	T+P	Credit	ECTS
6	221916032	Solid Waste Management	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist. Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None

The aim of lesson :

The aim of the course is to teach undergraduate students of Mechanical Engineering how to directly or indirectly release, store, transport, render harmless to the recipient environment and contribute to the economy of all kinds of waste and residue in a way that will not harm the environment.

Course Contents :

Types of solid waste, their impacts on the environment and disposal methods



Kütahya Dumlupınar University

Simav Technology Faculty Mechanical Engineering

221916033	Finite Elements				
Semester	Code	Name	T+P	Credit	ECTS
6	221916033	Finite Elements	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist. Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None

The aim of lesson :

The aim of this course, students will learn the basic mathematics of the finite element method, will have experience in the application and to create an infrastructure that solves several problems using this method.

Course Contents :

Introduction. General processing steps of the Finite Element Method. Continuum split into finite elements. Element interpolation function, shape functions. Isoparametric element concept. Continuum split into finite elements. Non-linear analysis techniques. Integral formulation and variational methods. Computer programs for applications. Various applications..



Kütahya Dumlupınar University

Simav Technology Faculty Mechanical Engineering

221916035	Vehicle Technology				
Semester	Code	Name	T+P	Credit	ECTS
6	221916035	Vehicle Technology	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Associate Prof. Dr. Vedat Taşdemir	Associate Prof. Dr. Vedat Taşdemir	None

The aim of lesson :

Motor vehicle concept, historical development and classification; Vehicle characteristics and energy balance; Engine characteristics and power requirement of vehicles; Clutches, gearboxes, transmission shafts; Differential, axles and tire mechanics; Vehicle aerodynamics; Forces in vehicle motion.

Course Contents :

To learn the vehicle technology concepts required in engineering education and to gain the ability to use them.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916036	Fuels and Combustion				
Semester	Code	Name	T+P	Credit	ECTS
6	221916036	Fuels and Combustion	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None

The aim of lesson :

With this course, students will learn about the basic concepts of fuels and combustion, classification and physicochemical properties of fuels, general properties sought in fuels, combustion equations, stoichiometric analysis of combustion reactions, solid, liquid and gaseous fuel combustion, combustion in engines, calculation of emission values of incomplete combustion products, emission values and environmental pollution.

Course Contents :

Transfer of basic information about the chemical and physical properties of solid, liquid and gaseous fuels and the combustion systems of these fuels



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221916037	Technology and R&D Management				
Semester	Code	Name	T+P	Credit	ECTS
6	221916037	Technology and R&D Management	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None

The aim of lesson :

In this course, basic issues regarding the use and management of technology will be explained. Innovative approaches in our country and around the world will be explained, awareness will be created for students and their innovative thinking abilities will be developed.

Course Contents :

Basic concepts of technology and technology management, Technology management activities and Technology management tools, Research and Development (R&D) and Innovation Management issues



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917020	Entrepreneurship and Project Management				
Semester	Code	Name	T+P	Credit	ECTS
7	221917020	Entrepreneurship and Project Management	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Mesut YAZICI mesut.yazici@dpu.edu.tr	None

The aim of lesson :

Today, in the university, both in industry project to design, produce and perform quite increased importance. Engineering students studying the economic development and employment solutions to the problems of the main factors that entrepreneurship clarify the project development and management aspects to address deficiencies and to inform, in Project Management professionalism of the necessity of explaining in this field, career development tempt quite a big benefit will provide. Also in the process of setting up the spirit of entrepreneurship and business Establish will help to overcome challenges easily.

Course Contents :

This course covers understanding entrepreneurship and project management, as well as the ability to prepare projects.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
7	221917021	Graduation Project	2	1	6

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Required

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Prof. Dr. Muammer GAVAS	Prof. Dr. Muammer GAVAS	None

The aim of lesson :

To make investigation about a matter, to write results and doing presentation.

Course Contents :

Determination of senior project subject. Literature review regarding the selected subject and collecting necessary information. Writing the project after determining the information to be included in the project. Presentation of the project.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
7	221917023	History of Science	2	2	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Instructor Yılmaz ÇETİNER	None

The aim of lesson :

To teach the importance of the principles of Atatürk through explaining the fundamental principles and benefits of the republic.

Course Contents :

Events, thoughts and principles in the rise and development process of Modern Turkey



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
7	221917024	Ottoman History	2	2	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None

The aim of lesson :

The aim of the course is to teach the political and cultural events that took place from the foundation of the Ottoman Empire to its collapse, to examine the diplomatic relations of the Ottoman Empire with other states, to analyze the social and cultural dynamics in the Ottoman Empire, and to learn the organization of the state.

Course Contents :

Political and cultural history of the Ottoman Empire from its foundation to its collapse.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
7	221917025	Sign Language	2	2	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Fatih Selim BAYRAKTAR	None

The aim of lesson :

Providing students with the ability to understand and speak sign language to enable active and effective communication with disability groups they may encounter in their professional lives.

Course Contents :

To teach sign language used by hearing-impaired individuals and to gain the necessary skills to use the language in social life.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
7	221917026	Reporting and Presentation Techniques	2	2	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None

The aim of lesson :

This course aims to provide students with the knowledge and skills to write professional reports and make effective presentations in front of a group.

Course Contents :

Teaching effective presentation and report preparation techniques to Mechanical Engineering students.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

Semester	Code	Name	T+P	Credit	ECTS
7	221917028	Solar Energy Applications	3	3	4

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Asist Prof. Mesut YAZICI mesut.yazici@dpu.edu.tr	None

The aim of lesson :

To inform about solar energy and solar energy applications

Course Contents :

This course covers solar energy and its applications.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917029	Powder Metallurgy				
Semester	Code	Name	T+P	Credit	ECTS
7	221917029	Powder Metallurgy	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None	

The aim of lesson :

Within the scope of this course, it is aimed that the students acquire basic knowledge by explaining the powder metallurgy method production stages, advantages, disadvantages, points to be considered in part design.

Course Contents :

Powder metallurgy advantages, powder production and characterization, powder forming methods, sintering, additional processes.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917030	Work Molds Design				
Semester	Code	Name	T+P	Credit	ECTS
7	221917030	Work Molds Design	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Associate Prof. Dr. Alaattin KAÇAL	Associate Prof. Dr. Alaattin KAÇAL	None	

The aim of lesson :

To know aims of jigs and fixtures using in manufacturing and being able to make jigs and fixture designs suitable to production.

Course Contents :

Purpose of tool design. Types and functions of jigs and fixtures. Supporting and locating principles. Clamping and workholding principles. Basic construction principles. Design economics. Developing the initial design. Tool drawings. Template jigs. Vise-held and plate fixtures. Plate jigs. Angle plate jigs and fixtures. Channel and box jigs. Vise-jaw jigs and fixtures. Power workholding. Modular workholding. Welding and inspection tooling. Low-cost jigs and fixtures. Tooling for numerically controlled machines. Tool materials.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917032	Computer Aided Mold Design				
Semester	Code	Name	T+P	Credit	ECTS
7	221917032	Computer Aided Mold Design	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Yakup YILDIZ	None	

The aim of lesson :

The aim of this course is to gain the students the ability to make die and mold designs using a software.

Course Contents :

Sheet metal design, drafting and assembling of sheet metal parts, progressive die design, mold design



Kütahya Dumlupınar University

Simav Technology Faculty Mechanical Engineering

221917033	Steam Boilers				
Semester	Code	Name	T+P	Credit	ECTS
7	221917033	Steam Boilers	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Mesut YAZICI mesut.yazici@dpu.edu.tr	None	

The aim of lesson :

Be accomplished with the basic knowledge of conventional steam boilers. Be equipped with the basic knowledge of efficiency of boilers Have the basic knowledge of fuels and combustion. Be equipped with the basic knowledge on boilers auxiliary elements Acquire a capacity to analyze and design of boilers. Be accomplished with the basic knowledge of chimney

Course Contents :

This course includes the introduction of steam boilers and the auxiliary components of boilers.



Kütahya Dumlupınar University

Simav Technology Faculty Mechanical Engineering

221917034	System Dynamics and Control				
Semester	Code	Name	T+P	Credit	ECTS
7	221917034	System Dynamics and Control	3	3	4
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	Asist Prof. Fatih Selim Bayraktar https://portal.dpu.edu.tr/fatih.bayraktar fatih.bayraktar@dpu.edu.tr	None	

The aim of lesson :

To help students comprehend the fundamental principles and theory of automatic control systems. To provide the ability to model, analyze, and design control systems. To develop the capability to apply this knowledge to real-world problems, including industrial applications.

Course Contents :

Basic Concepts: Open/closed-loop systems, history and importance of control systems. System Modeling: Block diagrams, signal flow graphs, Laplace transforms, and transfer functions. Time and Frequency Domain Analysis: Time response, stability (Routh-Hurwitz), root locus, Bode and Nyquist plots. Controller Design: Principles and advantages of P, PI, PD, PID controllers. Advanced Topics: State-space analysis, linearization of non-linear systems. Application Areas: Hydraulic/pneumatic systems and industrial control applications.



Kütahya Dumlupınar University

Simav Technology Faculty Mechanical Engineering

221917036	Polymer Technology				
Semester	Code	Name	T+P	Credit	ECTS
7	221917036	Polymer Technology	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None	

The aim of lesson :

To understand the relationship commercially important polymers / plastics on structure-property. Knowledge of processing and shaping are and to learn about the sector.

Course Contents :

Polymer materials. Polymer chemistry. The synthesis of the polymer. Polymerization processes. properties of polymers, usage and classification. Polymer additives and fillers, polymer processing methods. Thermosets, elastomers, thermoplastics and their processing and production methods.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917037 Heat Exchangers					
Semester	Code	Name	T+P	Credit	ECTS
7	221917037	Heat Exchangers	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Mesut YAZICI mesut.yazici@dpu.edu.tr	None	

The aim of lesson :

Getting to know heat exchangers, learning their types and applications, making heat exchanger calculations

Course Contents :

This course covers the identification of heat exchangers, their types and applications, and heat exchanger calculations.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917038 Material Characterization					
Semester	Code	Name	T+P	Credit	ECTS
7	221917038	Material Characterization	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Prof. Dr. Nurullah KIRATLI	None	

The aim of lesson :

The aim is to learn the techniques used in material characterization; microscopic, thermal and diffraction analysis methods and to understand how the data are evaluated.

Course Contents :

Introduction to material characterization, classification of characterization methods, microscopic methods; optical microscope, scanning electron microscope and its working principle, transmission electron microscope and its working principle. Comparison of electron microscopes. Diffraction analysis; XRD, XRF, XPS. Grain size analysis (BET, microscopic, ..), thermal analysis methods (TG, DTA, DSC, Dilatometer), Fourier transform optical measurements (FTIR).



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917039 Powertrain					
Semester	Code	Name	T+P	Credit	ECTS
7	221917039	Powertrain	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Associate Prof. Dr. Vedat Taşdemir	Associate Prof. Dr. Vedat Taşdemir	None	

The aim of lesson :

Power transmission elements can be made recognizable and accounts. In particular the reduction of the mass moments of inertia be done, the engine side of the reduced availability of inertia, moment of inertia of the tires account can be made by the method of shaking, developing new information systems and technology transfer, account can be made automatic gearbox and automatic clutch.

Course Contents :

Engines, gearboxes, clutches, power transmission shafts, engine and vehicle speeds, power and torque speed calculations



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917041	Engineering Ergonomics				
Semester	Code	Name	T+P	Credit	ECTS
7	221917041	Engineering Ergonomics	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		Prof. Dr. Alaattin KAÇAL alaattin.kacal@dpu.edu.tr	Prof. Dr. Alaattin KAÇAL alaattin.kacal@dpu.edu.tr	None	

The aim of lesson :

To be able to introduce ergonomic principles to students in the field of mechanical engineering and to place human-centered design thinking. To examine the effects of ergonomics on productivity.

Course Contents :

Ergonomic principles in engineering practices and application environments.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917042	Technical English				
Semester	Code	Name	T+P	Credit	ECTS
7	221917042	Technical English	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None	

The aim of lesson :

Reading and comprehension of scientific and technical materials written in English.

Course Contents :

This course improves students' foreign language skills, especially in scientific and technical subjects.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917043	Composite Materials				
Semester	Code	Name	T+P	Credit	ECTS
7	221917043	Composite Materials	3	3	3
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Elective	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None	

The aim of lesson :

Having sufficient knowledge about matrix, reinforcement and composite materials

Course Contents :

Composite materials, usage areas and production methods



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917045	Computer Aided Design II				
Semester	Code	Name	T+P	Credit	ECTS
7	221917045	Computer Aided Design II	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		Prof. Dr. Alaattin KAÇAL	Prof. Dr. Alaattin KAÇAL	None

The aim of lesson :

Students being able to perform machining operations of any part for CNC using a CAD/CAM package.

Course Contents :

C-axis turning operations. Mill-turn operations. Multi-axis operations. Feature based CAM applications. DNC systems and operating principles. Sending application of the CNC part programmes to CNC machines.



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917046	Transport Technique				
Semester	Code	Name	T+P	Credit	ECTS
7	221917046	Transport Technique	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Associate Prof. Dr. Vedat Taşdemir	None

The aim of lesson :

To learn load types, continuous and discontinuous transport machines To learn component of transport machines To learn computation of transport machines To learn standards and regulations

Course Contents :

Load types, continuous transport machines, discontinuous transport machines, elevation machines and cranes, the parts of cranes and strength computations; belt conveyor, worm conveyor, elevators, pneumatic transporter machines



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221917047	Fuel Cells				
Semester	Code	Name	T+P	Credit	ECTS
7	221917047	Fuel Cells	3	3	3

Education Type	Language	Course Level	Course Internship Status	Type of Course
Formal Education	Turkish	Faculty	No	Elective

Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants
Mechanical Engineering		None	Prof. Dr. Semra DURMUŞ ACER	None

The aim of lesson :

understanding of the importance of fuel cell technology.

Course Contents :

fuel cell technology



Kütahya Dumlupınar University

Simav Technology Faculty
Mechanical Engineering

221918020	Workplace Training				
Semester	Code	Name	T+P	Credit	ECTS
8	221918020	Workplace Training	40	23	30
Education Type	Language	Course Level	Course Internship Status	Type of Course	
Formal Education	Turkish	Faculty	No	Required	
Department/Program	Precondition	Course Coordinator	Instructor	Course Assistants	
Mechanical Engineering		None	Asist Prof. Murat KOYUNBAKAN murat.koyunbakan@dpu.edu.tr	None	

The aim of lesson :

The aim of the course is to provide engineering and business experience.

Course Contents :

Students actively participate in the industry or other fields of engineering and then submit a report on the work to the university.