| 2018-2019 Academic Year List of Courses | | | | | |
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| **Code/Credits** | **Course** | **Semester Winter/Spring** | **Contents** | **Contact Details Of Lecturer** | **Department** |
| BMÜ-101/5 | INTRODUCTION TO COMPUTER ENGINEERING | 1/Winter | Topics covered in the discipline of computer engineering, computer engineering working areas, information about job opportunities. Basic concepts of computer engineering and information about course contents. | Name-Surname: Yusuf ÇELİK<br>Email: celikyusuf@munzur.edu.tr<br>Tel: +904282131794-2411 | Computer Engineering |
| BMÜ-111/9 | ALGORITHMS AND PROGRAMMING I | 1/Winter | Basic concepts in computer programming. Developing algorithms by formulating and step-by-step resolving problems, creating workflow charts. Concepts related to structured programming. Data types and variable definitions. Basic command structure. Condition and loop commands. Single and multidimensional array in programming languages. Application: Experimental studies on the development of sample programs for the consolidation of basic programming concepts in algorithm and programming-1. Current structured programming language, compiler and ready-to-use software are also included within the scope of this lab to the extent possible | Name-Surname: Soner KIZILOLUK<br>Email: sonerkiziloluk@gmail.com<br>T el: +904282131794-2520 | Computer Engineering |
| TBF-101/6 | GENERAL PHYSICS I | 1/Winter | Examination of sets and their properties. Definition of functions, finding domain and range set and special functions and graphics. Definition and properties of limit, intermediate value, Balzano and sign protection feature theorems, uncertainties in limit calculations. What is continuity? Function is continuous or not. Derivative concept, properties and derivatives of some functions, L'Hospital rule, geometric and physical interpretation of the derivative, concavity and convexity of a curve, maximum and minimum problems, curve drawings. | Name-Surname: Bilgin ZENGİN<br>Email: bilginzengin@munzur.edu.tr<br>Tel: +904282131794-2431 | Computer Engineering |
| TBM-101/6 | GENERAL MATHEMATICS 1 | 1/Winter | Examination of sets and their properties. Definition of functions, finding domain and range set and special functions and graphics. Definition and properties of limit, intermediate value, Balzano and sign protection feature theorems, uncertainties in limit calculations. What is continuity? Function is continuous or not. Derivative concept, properties and derivatives of some functions, L'Hospital rule, geometric and physical interpretation of the derivative, concavity and convexity of a curve, maximum and minimum problems, curve drawings. | Name-Surname: İnan ÜNAL<br>Email: inanunal@gmail.com<br>Tel: +904282131794-2476 | Computer Engineering |
| TRD-101/2 | TURKISH LANGUAGE-1 | 1/Winter | The definition and functions of the language, giving information about the birth of languages; uncovering the differences between written language and spoken language; the place of Turkish in world languages; historical dialects of Turkish language, contemporary dialects, historical periods of Turkish language, works written in these periods; alphabets that Turks used throughout history. | Name-Surname: Cemile ŞEN<br>Email: cemilesen@munzur.edu.tr<br>Tel:+904282131794-2147 | Computer Engineering |
| YDİ-101/3 | FOREIGN LANGUAGE-1 | 1/Winter | Basic English reading, comprehension, writing, and listening skills. | Name-Surname: Sema K. KAYA<br>Email:semakaypinar@munzur.edu.tr<br>Tel:+904282131794-1810 | Computer Engineering |
| BMÜ-112/9 | ALGORITHMS AND PROGRAMMING II | 2/Spring | Basic concepts in object oriented approach. Introduction to learning an object oriented programming language. Class, object, inheritance, polymorphism, abstract class and interface, contrary concepts. Application: Experimental studies on developing sample programs for consolidation of basic programming concepts, application on computer and documentation in report form. Some of the current structural and object oriented programming language, compiler, and ready-to-use software | Name-Surname: Sinem AKYOL<br>Email: akyolsinem@gmail.com<br>Tel: +904282131794-1831 | Computer Engineering |

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| | | | are also included within the scope of this lab to the extent possible. | | |
| TBF-102/6 | GENERAL PHYSICS II | 2/Spring | Electric Force and Field: Charge and conservation, electrification, insulators and conductors, Coulomb's law, electric fields of discrete and continuous charges. Gauss's Law. Static Charge Potential Energy: Discrete and continuous charges of potential, potential difference, dielectrics, connecting of capacitors and energy. Direct current: Current, power supplies, emf, resistance, energy and power, direct current circuits, structure of measuring tools, use of electricity and security. Magnetic Force and Field: conductors with currents and moving charges interact with the magnetic field, Biot-Savart's law. Electromagnetic Induction: Faraday's law of induction, Lenz's law, self-inductance, magnetic field energy. | Name-Surname: Handan AYDIN Email:haydin@munzur.edu.tr Tel: | Computer Engineering |
| BMÜ-106/5 | ELECTRIC CIRCUITS FOR COMPUTER ENGINEERING | 2/Spring | Passive direct current circuits; resistance elements and circuits; Kirsof voltage and current laws; analysis of loop currents and node voltages, linearity, superposition, Thevenin and Norton equivalents; operational amplifiers; and energy storage elements: inductance and capacitance, analysis of first order circuits, time constant, sinusoidal steady-state analysis; phasors, resistors, average power flow, AC power, maximum power transmission | Name-Surname: Bilgin ZENGİN Email: bilginzengin@munzur.edu.tr Tel: +904282131794-2431 | Computer Engineering |
| TBM-102/6 | GENERAL MATHEMATICS II | 2/Spring | Indefinite integral and properties, Integral of trigonometric functions, Definite integral and properties, Area, volume calculation, calculating the length of the arc, Finding the area of a rotational surface, Derivation of an integral, Polar coordinates, Partial derivatives, Double integrals and their applications, region transformations in double integrals, triple integrals and their applications, Curvilinear integrals | Name-Surname: İnan ÜNAL Email: inanunal@gmail.com Tel: +904282131794-2476 | Computer Engineering |
| TRD-102/2 | TURKISH LANGUAGE-2 | 2/Spring | Providing information about spelling rules and punctuation marks and reinforcing them with examples; giving information about correct and effective curriculum vitae and petition writing; to introduction oral expression types and giving characteristics of oral expression types; to more beautiful and impressive writing and speaking to make reading and writing applications. | Name-Surname: Cemile ŞEN Email: cemilesen@munzur.edu.tr Tel:+904282131794-2147 | Computer Engineering |
| YDİ-102/3 | FOREIGN LANGUAGE -II | 2/Spring | This course is designed to improve university students' skills of reading, writing, listening and speaking effectively in their fields of study and in their academic activities. The aim of the course is to improve the students' communicative competence through creating interesting contexts, showing them authentic materials and authentic situations in and out of class and giving them assignments that lead to increase the usability of the language | Name-Surname: Hasan Şahin YILDIRIM Email:hsyildirim@munzur.edu.tr Tel: | Computer Engineering |
| BMÜ-231/6 | DIGITAL SYSTEMS | 3/Winter | Digital systems, number systems, binary codes, error detecting and error correcting codes. Boolean algebra, switching algebra, binary operations and Boolean functions. Minimization of Boolean functions. Combinational logic, logic gates, analysis of combinational circuits, circuit design with logical gates. Integrated circuits, design with MSI chipsets, ROM, PLA. Synchronous sequential circuits, memory elements, analysis and design procedures. Registers, counters, RAM. Asynchronous sequential circuits. | Name-Surname: Faruk SERİN Email: bmfarukserin@gmail.com Tel: +904282131794-1831 | Computer Engineering |
| BMÜ-241/4 | DISCRETE STRUCTURES for COMPUTER ENGINEERS | 3/Winter | Logical implications of logic, qualifiers and qualitative expressions, Theorems and proofs, Set theory, Relations; sorting and equivalence, Functions; Cardinality and bijection, Mathematical Induction, Basic counting rules; Permutation and | Name-Surname: İnan ÜNAL Email: inanunal@gmail.com Tel: +904282131794-2476 | Computer Engineering |

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| | | | combination, Binomial coefficients, Pigeonhole principle, Discrete probability, plots | | |
| BMÜ-223/4 | SYSTEM THEORY | 3/Winter | Classification of systems and signals. Basic system analysis approaches. Analysis of linear and time invariant systems. System analysis with Laplace transforms. Block diagrams and stability. Introduction to information systems. System development life cycle, System concept. Information system analysis and modeling. Probability study. Management function. Data and information concepts, determination of information requirements. System analysis and modeling tools. Languages used in system modeling. Classification of information systems. Computer aided software engineering tools. Ensuring user interaction. Importance of software maintenance. Examination of IT systems. | Name-Surname:<br>İnan ÜNAL<br>Email:<br>inanunal@gmail.com<br>Tel: +904282131794-2476 | Computer Engineering |
| BMÜ221/8 | DATA STRUCTURES | 3/Winter | Asymptotic notation, performance measurement, memory / time complexity. Recursive algorithms, recursive relations, introduction to algorithm analysis. Multi-dimensional / triangle / sparse matrix representations. Stack and queue data structures, prefix / infix / postfix expressions. Single / dual-connector (loop) lists. Binary tree, binary search tree, recursive and iterative binary tree traversals, generalized lists. Heaps, priority queues, data structures for discrete sets. Graph representations, Breadth first search and depth first search, spanning tree, shortest path problem. Selection, placement, bubbles, counting, quick, merge, heap, radix sorting algorithms and analysis. AVL trees. | Name-Surname:<br>Ulaş Baran BALOĞLU<br>Email:<br>ubbaloglu@gmail.com<br>Tel:<br>+904282131794-2454 | Computer Engineering |
| MAT-215/3 | LINEAR ALGEBRA | 3/Winter | Vector, length and dot product, planes, matrices and linear equations, Gaussian elimination, matrix elimination, the rules of matrix operations, the matrix inverse with the Gauss-Jordan method, factorization, transpose, and permutation matrices, vector spaces and subspaces, null space, row, column and left null space, rank, Ax = b solution, linear independence, bases and dimension, orthogonality, projections, Orthogonal bases and Gram-Schmidt, Determinants, Cofactors, Cramers rule, eigenvalues and Özelvekt up, diagonalization of matrices, eigenvalues calculation, differential equations applications, symmetric, positive defined and similar matrices, complex vectors and matrices, Hermitian and unitary matrices, Applications. | Name-Surname:<br>İnan ÜNAL<br>Email:<br>inanunal@gmail.com<br>Tel: +904282131794-2476 | Computer Engineering |
| AİT-201/2 | ATATÜRK'S PRINCIPLES AND HISTORY OF TURKISH REPUBLIC - I | 3/Winter | The establishment of the Republic of Turkey as a secular and unitary state after the collapse of the Ottoman Empire; the history of Turkish modernization experience in accordance with the establishment of the new state, the instruction of the Turkish Revolution pioneered by Kemal Atatürk and the Kemalist thought, as the meaning and statement of modernity and secularism in Turkey to young generations and let them figure out its significance. | Name-Surname:<br>Tahsin HAZIRBULAN<br>Email:tahsinhazirbulan@munzur.edu.tr<br>Tel: | Computer Engineering |
| BMÜ-201/3 | PROFESSIONAL ENGLISH -I | 3/Winter | The main aim of the lesson consists in the area which they exercise. They have to know and understand the items and terminologies. The lesson is based on that the reading comprehensions will be developed. For reaching this aim the critical faculty and analyzability of the pupils will be developed. | Name-Surname:<br>İnan ÜNAL<br>Email:<br>inanunal@gmail.com<br>Tel: +904282131794-2476 | Computer Engineering |
| BMÜ-234/6 | COMPUTER ORGANIZATION AND DESIGN | 4/Spring | Computer abstraction and technology. Computer language. Instruction set architecture (ISA), ISA design principles, RISC and CISC architectures, assembly and machine language, | Name-Surname: Özal YILDIRIM<br>Email: | Computer Engineering |

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| | | | programming of a RISC machine. Computer arithmetic, arithmetic-logic units, floating-point numbers and arithmetic applications. Processor design, datapath and control applications, micro-programmed control, exception detection. Pipeline and hazardous conditions, pipelined processor design, identify of dangerous situations, ramification estimates and exception handling. Memory hierarchy, principles and structure. Cache performance, virtual memory and segmentation. Input-output devices, I / O performance, I / O interfaces. | yildirimozal@hotmail.com<br>Tel: +904282131794-2411 | |
| BMÜ-236/4 | NUMERICAL METHODS | 4/Spring | Mathematical Modeling and Engineering Problem Solving. Numerical Accounts, Management, rounding and truncation errors. Solution of Nonlinear Equations - Off Methods (Graphics, Bisection, Relocation, step increment). Solution of Nonlinear Equations - Public Methods (Simple Iteration, Newton-Raphson, Secant, Floor Roots). Find roots of polynomials - Classic, Müller, Bairstow, Other Methods. Solution of Linear Systems - Gaussian elimination, Gauss Jordan. Special Matrices and Gauss Seidel. Solution of Nonlinear Equations. Finite Difference. Interpolation (Gregory Newton - Langrange and Inverse Interpolation). Numerical Differentiation. Numerical Integration. Curve Fitting. Solution of Ordinary Differential Equations. | Name-Surname:<br>Ali AŞKIN<br>Email:<br>aliaskin@munzur.edu.tr<br>Tel: +904282131794-2428 | Computer Engineering |
| İST-201/4 | PROBABILITY AND STATISTICS | 4/Spring | Definition of probability. Probability actions. Application areas of probability and statistics. Discrete probability, finite probability space, probability measure, conditional probability, Bayes theory. Discrete random variables, binomial, Poisson, geometric distributions. Mean and variance. Integer random variables. Continuous random variables, exponential and normal distribution, probability density functions. Mean and variance calculation, the central limit theory, the compound distributions. Linear regression and correlation. Multiple linear regression. Statistical estimation theory. Chi-square test. Curve fitting. Sampling distributions, sampling nature and vehicle , random approach for sampling, a simple method, flattened sampling, cluster sampling. Data analysis, graphical and numerical operations. Markov chains, queuing. | Name-Surname:<br>Muzaffer AŞKIN<br>Email:<br>muzafferaskin@munzur.edu.tr<br>Tel:+904282131794-2515 | Computer Engineering |
| BMÜ-238/4 | DIGITAL SIGNAL PROCESSING | 4/Spring | Discrete-time signals and systems. Analog / Digital Digital / analog conversion and stages. The solution of linear constant-coefficient differential equations. Z Transform, definition and region of convergence (ROC). The properties of Z-transform. Solution of inverse Z-transform and linear constant-coefficient differential equations using Z-transform. Stability of discrete-time systems. Structure of discrete-time systems and discrete-time signals in the frequency domain analysis. Discrete Fourier Transform (DFT), the definition and properties. Discrete Fourier Transform (AZFd), the definition and properties. Fast Fourier Transform (FFT), the definition and properties. Digital filter design techniques. | Name-Surname:<br>İnan ÜNAL<br>Email:<br>inanunal@munzur.edu.tr<br>Tel:<br>+904282131794-2476 | Computer Engineering |
| MAT-224/4 | DIFFERENTIAL EQUATION | 4/Spring | Infinite series, features and types. The convergence of infinite series and convergence tests. Power series, Taylor and Mac Lourin expansions. Fourier series. Definition and features of the Bessel, Gamma and Beta Special Functions. Complex Functions and conformal (angle Protects) Mapping. Complex Integration and Residue Theorem. First order ordinary differential equations and their | Name-Surname:<br>Ali AŞKIN<br>Email:<br>aliaskin@munzur.edu.tr<br>Tel: +904282131794-2428 | Computer Engineering |

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| | | | applications. Applications of second order differential equations with constant coefficients. Higher order linear differential equations and their applications. Solution of linear differential equations in terms of the power series. Laplace transform and its properties. The inverse Laplace transform and some applications. Partial differential equations and their applications. | | |
| BMÜ-232/3 | DIGITAL ELECTRONICS LAB. | 4/Spring | Integrated circuits, basic circuit, properties, identification of logic families, of relevant theoretical knowledge.<br>Common test : the necessary safety precautions when working with electrical circuits, Laboratory instruments recognition, Oscilloscope, measuring instruments, Learning to use the logic analyzer , the measurement and analysis of different signs . Recognition of basic DC and AC circuit elements and measurement and analysis in a simple electrical circuit.<br>Common test: the recognition of basic electronic circuit elements, simple electronic circuit applications for understands transistors operation in linear and switching mode, measuring the resulting signals and analysis of them in the oscilloscope.<br>Integrated Circuit Logic families: Basic properties of the TTL, MOS, CMOS, HTL, ECL etc. families as a practical extraction and comparison. Families belonging to different applications use the same circuit.<br>Combinational logic gates and circuits: Achievement the function equation from a combinational circuit problem, and realization this with SSI integrated gates. Only be carried out with NAND or NOR gates. Given a combinational logic circuit, removing the definition table from a given combinational logic circuit.<br>Medium Scale Integrated Circuits and Applications: Combinational circuit design applications With MUX, DEMUX, Encoder, and Decoder MSI.<br>Digital Arithmetic: With Adder, 4-bit parallel adder, ALU integrated circuits, mathematical operations to be performed in binary. Analysis with logic analyzer.<br>Flip- Flops and Sequential Circuit Design: Testing of different types of integrated FF, the design of a sequential circuit problem and realization with integrated circuits and analysis.<br>Counters and Registers: analysis of the back and forth counter and shift register integrated, counting, shifting, serial - parallel conversion and related applications and analysis of signals. Monitoring the fluctuation count through Decoder and DSPlayer.<br>Data Conversion: ADC and DAC integrated circuits examination and analysis of input and output signals.<br>Timer Circuits: Clock pulse generating circuit examination and application. With 555 integrated the timing signals obtained. | Name-Surname: Soner KIZILOLUK<br>Email: sonerkiziloluk@gmail.com<br>Tel: +904282131794-2520 | Computer Engineering |
| AİT-202/2 | ATATÜRK'S PRINCIPLES AND HISTORY OF TURKISH REPUBLIC - II | 4/Spring | This course covers which stages newly established Turkish Republic went through, revolutions fulfilled by Ataturk in the modernization period, Ataturk's principles, home and foreign politics determined by Ataturk for the newly established Turkish Republic, transition to multi-party political life and developments in the area of politics, society, economy and education by that time. | Name-Surname: Tahsin HAZIRBULAN<br>Email: tahsinhazirbulan@munzur.edu.tr<br>Tel:+904282131794- | Computer Engineering |
| BMÜ-202/3 | PROFESSIONAL ENGLISH -II | 4/Spring | In this course, students gain the necessary skills of language by the way of reading and interpreting academic passages, listening acedemic tracks, writing essays in academic subjects. In | Name-Surname: Soner KIZILOLUK<br>Email: | Computer Engineering |

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| | | | other words, they will have abilities about both comprehension of reading and listening academic texts , using English correctly in written and oral communication and presenting their ideas in an academic format by writing.The writing techniques that are needed for presenting their written term works and reports are given in practice with the world's most widely used formats . In addition, advanced grammar issues which make trouble, are taught to support this course. | sonerkiziloluk@gmail.com<br>Tel: +904282131794-2520 | |
| BMÜ-333/8 | MICROPROCESSORS | 5/Winter | History of computers, vacuum tubes, transistors, integrated circuits, intel and motorola family. Memory foundations and memory organization, flip-flops, common paths, RAM, ROM, EPROM structures. Differences between microcontroller and microprocessor. Microprocessor architecture and operation, PIC16F877A 8-bit microcontroller structure. 16-bit microprocessors, 8086-8088, logical and physical memories, segmented memory structure, protected. Addressing modes, data addressing modes, program memory addressing. Data transfer commands, address loading commands, string commands. Arithmetic and logic commands, addition, subtraction, division, multiplication, comparison and, or, scroll, rotation. Sequence comparison, program control commands, branch commands, subroutines. Introduction to interrupts, software interrupts, hardware interrupts. 8085 microprocessor software programming examples, use of proteus simulator. PIC16F877A microcontroller software programming examples. PIC16F877A microprocessor software programming examples. | Name-Surname: Özal YILDIRIM<br>Email:<br>yildirimozal@hotmail.com<br>Tel: +904282131794-2411 | Computer Engineering |
| BMÜ-329/7 | DATABASE SYSTEMS | 5/Winter | Definitions and basic concepts: Database, database management systems, database architecture, schemas, and data independence. Data models: Entity-relationship model, hierarchical model, network model, the relational model and object-oriented model. Integrity constraints and relational design: space restrictions, reference restrictions, dependencies between attributes, normal forms for relationships, the design criteria. Relational languages: relational algebra and relational calculus. SQL standard relational language: data definition, data processing, data base management facilities and major commands. Object-oriented databases, data modelling and language features. Examples: data modeling, database design, database definition and query examples. | Name-Surname:<br>Yusuf ÇELİK<br>Email:<br>celikyusuf@tunceli.edu.tr<br>Tel: +904282131794-2411 | Computer Engineering |
| BMÜ-325/5 | PROGRAMMING LANGUAGES | 5/Winter | The development of programming languages. Syntax and semantics concepts. Binding, type checking and scopes. Data types. Expressions and assignment statements. Statement-level control structures. Subprograms and subprogram applications. Abstract data types. Support for object-oriented programming. Concurrency. Functional programming languages, and LISP. Mantısal and PROLOG programming language. | Name-Surname: Faruk SERİN<br>Email:<br>bmfarukserin@gmail.com<br>Tel: +904282131794-1831 | Computer Engineering |
| BMÜ-313/4 | FORMAL LANGUAGES AND AUTOMATA THEORY | 5/Winter | Finite Automata (deterministic and non-deterministic automata models, lambda-transitions, Mealy and Moore machines, simplification method). Regular sets and expressions, relationship between finite automata and regular expression. Grammar and Languages (Formal grammar and languages, grammar and language classes and properties. Regular grammar and languages, relationship | Name-Surname:<br>Ulaş Baran BALOĞLU<br>Email:<br>ubbaloglu@gmail.com<br>Tel:<br>+904282131794-2454 | Computer Engineering |

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| | | | between finite automata and regular grammar). Context-free grammars and languages. Push-down automata - pushdown automata model, relationship between pushdown automata and context free grammar. Turing Machines. Parsing - Parsing: Parsing types, top-down and bottom-up parsing, LL (k) and LR (k) parsing for context-free languages , using finite automata models for LR (k) parsing. | | |
| Bmü-353/6 | ARTIFICAL INTELLIGENCE /Technical Elective | 5/Winter | Learning artificial intelligence method, applications, and languages. Determining a problem is fit to AI methods or not. | Name-Surname: Muhammed TALO Email: muhammedtalo@gmail.com Tel:+904282131794- | Computer Engineering |
| BMÜ-393/1 | PROFESSIONAL PRACTICE I | 5/Winter | Professional Practice-1st lesson is taught by weekly lessons, in accordance with the principles that are set in 'Practical Working (Training) Instruction "and" Tranining Instruction of Students in Department ". The germane juries, evaulations by listening presentations on their internship and by asking questions.Giving 1st midterm mark according to the working performance around their training area and taking into consideration the paperwork filled out by job-site.The evaulation of the jury , by listening the presentations of students related with their training and by asking questions. According to the assessment made by the jury,giving the 2nd midterm exam. | Name-Surname: İnan ÜNAL Email: inanunal@munzur.edu.tr Tel: +904282131794-2476 | Computer Engineering |
| BMÜ-314/6 | OPERATING SYSTEMS | 6/Spring | Introduction, What is an operating system, processes, inter-process communication, process scheduler, memory management, virtual memory, page replacement algorithms, the safety mechanism, the protection mechanism, input / output "IQ" principles and programming, hardware and software deadlocks, distributed operating systems, communication in distributed operating systems, synchronization in distributed operating systems, the process and processor in distributed operating systems, distributed file system. | Name-Surname: Özal YILDIRIM Email: yildirimozal@hotmail.com Tel: +904282131794-2411 | Computer Engineering |
| BMÜ-332/6 | COMPUTER NETWORKS | 6/Spring | Computer networks, Digital Communication and general descriptions. Coding techniques, Error detection and correction codes. OSI reference model, layers and functions. Protocols, protocol structure, layer protocols, TCP / IP protocol stack examining. Detailed examination of the Transport, Network and Data link layers and header structures, addressing. Static and adaptive routing algorithms. Frame structures, MAC addressing structures. Computer networking concepts, LAN, MAN, WAN topologies. LAN and WAN technologies. Network Devices, NIC, Repeater, HUB, Bridge, Switch, Router, Gateway examination, the basis information for configuration. WAN technologies. Structured Cabling, Campus, Building and horizontal cabling techniques. Internet addressing, subnets, IP routing, Internet services programs. Network operating systems, DNS, DHCP, FTP, etc. servers and Overview to network management software. | Name-Surname: Soner KIZILOLUK Email: sonerkiziloluk@gmail.com Tel: +904282131794-2520 | Computer Engineering |
| BMÜ-316/5 | ALGORITHM ANALYSIS | 6/Spring | Asymptotic growth rate and asymptotic representations. Basis tools for performance comparison and analysis. Recursive thinking, recursive relationships. At worst, average and best-case analysis. Using master theorem. An example for divide and conquer technique: The multiplication of two n-bit number. An overview to sorting and selection: Sorting in linear | Name-Surname: Serpil ASLAN Email: saslan@munzur.edu.tr Tel: +904282131794-1831 | Computer Engineering |

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| | | | time (step, counting and sorting), lower bound for sorting, analysis of heap, heap sort, average-case analysis of placement and quick sort, tournament method, finding the k-th smallest element in linear time. Dynamic programming: multiplication of Matrix series, the longest common subsequence. | | |
| BMÜ-316/6 | SOFTWARE ENGINEERING | 6/Spring | Software development project plan. Software development project management. Software metrics and estimation techniques. Software implementation and documentation. Software testing. Software configuration and implementing. Software development standards. Software quality assurance. Risk analysis. Software maintenance. Configuration management. Computer-aided software modeling tools. | Name-Surname: Yusuf ÇELİK Email: celikyusuf@tunceli.edu.tr Tel: +904282131794-2411 | Computer Engineering |
| BMÜ-354/6 | ROBOTIC SYSTEMS /Technical Elective | 6/Spring | Artificial Intelligence methods, language learning and applications, understanding of the compatibility of a problem with these methods | Name-Surname: Sinem AKYOL Email:akyolsinem@munzur.edu.tr Tel:+904282131794-1831 | Computer Engineering |
| BIL101/2 | SCIENCE HISTORY/Social Elective | 6/Spring | What is science ?, scientific method, science-history relationship, functions of history of science, various approaches to history of science, scientific developments in ancient times, science in the Middle Ages, science in medieval Islamic world, Renaissance and science, modernity and science, industrialization and Science, Today's Science | Name-Surname: Vedi TEMİZKAN Email: veditemizkan@munzur.edu.tr Tel:+904282131794- | Computer Engineering |
| BMÜ-431/4 | COMPUTER SYSTEMS LAB. | 7/Winter | Theoretical preparation for the tests. Win2003 Operating Systems and Features. Linux Operating Systems and Features. TCP-IP Simulation and Distributed Programming with JAVA. Using Databases in client-server architecture. Basic tests in order to configuring Router and Switch devices. LAN Technologies. VOIP (Voice over IP), Voice transmission over IP. computer network simulations with OPNET. Monitoring and evaluation of network traffic. | Name-Surname: Soner KIZILOLUK Email: sonerkiziloluk@munzur.edu.tr Tel:+904282131794-2520 | Computer Engineering |
| BMÜ-425/6 | INTERNET PROGRAMMING | 7/Winter | In general, perform applications of basis technologies, protocols, softwares belongs to all layers which are used in computer networks and internet: Data communication fundamentals in hardware layer, data communication Fundamentals in software layer, data communications between different environments, data communication in multi-threaded environment, problems and solutions, basic internet protocol examination and be performed within the network servers. Markup Languages and format plates. HTML, Dynamic HTML. HTTP, forms, and data interchange. Client-side programming. JavaScript. Server objects, browsers, DOM. Internet programming with Java. Server-side programming: Web servers ((Apache, Apache Tomcat, Glassfish). Java Servlets. (JSP) Separable programming and representation: Java Server Pages. | Name-Surname: Vedat TÜMEN Email: vtumen@munzur.edu.tr Tel: +904282131794- | Computer Engineering |
| BMÜ-401/5 | COMPUTER ENGINEERING DESIGN | 7/Winter | Within the framework of a project team, will be obtained skills and experience of design, project manager, design tools, simulation standarts, evaluation of quality concept. | Name-Surname: İnan ÜNAL Email: inanunal@munzur.edu.tr Tel: +904282131794-2476 | Computer Engineering |
| UYG-101/2 | Human History /Social Elective | 7/Winter | The new meanings gained by the concept of civilization in the historical process the milestones of the distance along the path of civilization, the main motivations, production-consumption relations and political-social formations, agricultural activities, | Name-Surname: Tahsin HAZIRBULAN Email:tahsinhazurbulan@munzur.edu.tr Tel:+904282131794- | Computer Engineering |

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| | | | technical developments, wars, political structures / regimes developments, state, religious-belief systems, art, culture and daily life developments, political systems, ideologies, enlightenment and scientific developments, industrialization, urbanization, new social layers and their role in shaping today's world and modern thought will be covered in the East-West of these processes. different formations and institutions gained in the axis will be evaluated in a comparative manner. | | |
| BMÜ-462/6 | DATA MINING/Technical Elective | 7/Winter | Introduction. Data warehouse and OLAP Technology for data mining. Data preprocessing. Classification: Basic Concepts, Model Evaluation. Classification: Alternative Techniques (Rule-based, nearest neighbor classifiers). Association Analysis: Basic Concepts and Algorithms. Association Analysis: Advanced Concepts. Cluster Analysis: Basic Concepts. Cluster Analysis: Algorithms, Anomaly detection. Regression. | Name-Surname: Soner KIZILOLUK Email: sonerkiziloluk@gmail.com Tel: +904282131794-2520 | Computer Engineering |
| BMÜ-456/6 | DIGITAL IMAGE PROCESSING/Technical Elective | 7/Winter | Introduce of human visual perception system. Sampling and Quantization. Basic gray level transformations. Histogram equalization and customization. Spatial filtering: softening filters. Spatial filtering: Sharpening filters. Derivative-based filters. Introduce the Fourier transform and its basic properties. Low-pass filters in the frequency domain. High-pass filters in the frequency domain. Basis of morphology. Identify discontinuities. Edge joints and limit-setting. Thresholding and region-based segmentation. | Name-Surname: Muhammed TALO Email: muhammedtalo@munzur.edu.tr Tel: +904282131794- | Computer Engineering |
| BMÜ-439/1 | PROFESSIONAL PRACTICE II | 7/Winter | Professional Practice-2nd lesson is taught by weekly lessons, in accordance with the principles that are set in 'Practical Working (Training) Instruction "and" Tranining Instruction of Students in Department ". The germane juries, evaulations by listening presentations on their internship and by asking questions.Giving 1st midterm mark according to the working performance around their training area and taking into consideration the paperwork filled out by job-site.The evaulation of the jury , by listening the presentations of students related with their training and by asking questions. According to the assessment made by the jury,giving the 2nd midterm exam. | Name-Surname: İnan ÜNAL Email: inanunal@munzur.edu.tr Tel: +904282131794-2476 | Computer Engineering |
| BMÜ-421/6 | SIMULATION AND MODELLING | 8/Spring | Systems modeling and simulation, matlab m file commands, Simulink, computer-aided modeling, neural networks, fuzzy logic applications, the finite element method, mesh generation. System description and mathematical modeling. Dynamic systems. Stochastic generators. Spatial Distributions. Stochastic data representation. Modeling of time-dependent systems. Markov processes. Event-triggered systems. System optimization. Applications of simulation packages. | Name-Surname: Muhammet GÜL Email: muhammetgul@munzur.edu.tr Tel: +904282131794-2438 | Computer Engineering |
| UYG-102/2 | Human HISTORY II/Social Elective | 8/Spring | Ancient Greece, Hellenistic period and Roman period with a general evaluation of the political history of Ancient Egypt, Mesopotamia and Anatolia. | Name-Surname: Tahsin HAZIRBULAN Email:tahsinhazirbulan@munzur.edu.tr Tel:+904282131794- | Computer Engineering |
| BMÜ-469/6 | BIOINFORMATIC/ Technical Elective | 8/Spring | Bioinformatics concept and its applications, information theory, collection of data, its manipulation and allocation, creation of a database and its usage, analysis of protein and nucleotide databases, primer design, interpretation of nucleotide sequence analysis results. | Name-Surname: Serpil ASLAN Email: saslan@munzur.edu.tr Tel: +904282131794-1831 | Computer Engineering |
| BMÜ-459/6 | NETWORK SECURITY/Technic | 8/Spring | Security concepts vulnerabilities, attacks and defenses in computer | Name-Surname: Faruk SERİN | Computer Engineering |

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| | al Elective | | systems and networks | Email: bmfarukserin@munzur.edu.tr Tel: +904282131794-1831 | |
| BMÜ-463/6 | MACHINE LEARNING/Technical Elective | 8/Spring | Introduction to Machine Learning, Decision Trees, Instance Based Learning, Bayesian Learning, Logistic Regression, Neural Networks, Support Vector Machines, Model Selection, Feature Selection, Clustering, k-means, Expectation Maximization, Mixture of Gaussians, Ensemble Learning, Deep Learning, Adversarial Learning, Reinforcement Learning | Name-Surname: Faruk SERİN Email: bmfarukserin@munzur.edu.tr Tel: +904282131794-1831 | Computer Engineering |
| BMÜ-402/4 | GRADUATION PROJECT | 8/Spring | Graduation Project studies is taught in consultation with the Project Manager, in accordance with the principles that are set in "Graduation project Instruction" and "Guidelines of Graduation Project in Department". Investigation and development of project work, under the supervision of the manager. Giving the first midterm exam according to performance of student's work. Investigation and development of project work, under the supervision of the manager. Giving the second midterm exam according to performance of student's work. Project works, writing in accordance with spelling rules in a thesis format and preparing for the presentation. Delivery of Graduation Project. | Name-Surname: Email: Tel: | Computer Engineering |

| **2015-2016 Academic Year List of Traineeship Vacancy** | | | | |
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| **Number of the Vacancy** | **Credit(Number if its offered)** | **Contents** | **Contact Details of Mentor** | **Department Academic or Administrative Department** |
| | 1 | Professional Practice-1st lesson is taught by weekly lessons, in accordance with the principles that are set in 'Practical Working (Training) Instruction "and" Tranining Instruction of Students in Department ". The germane juries, evaulations by listening presentations on their internship and by asking questions.Giving 1st midterm mark according to the working performance around their training area and taking into consideration the paperwork filled out by job-site.The evaulation of the jury , by listening the presentations of students related with their training and by asking questions. According to the assessment made by the jury,giving the 2nd midterm exam. | Name-Surname: E-mail: Tel: | Computer Engineering |
| | 1 | Professional Practice-2nd lesson is taught by weekly lessons, in accordance with the principles that are set in 'Practical Working (Training) Instruction "and" Tranining Instruction of Students in Department ". The germane juries, evaulations by listening presentations on their internship and by asking questions.Giving 1st midterm mark according to the working performance around their training area and taking into consideration the paperwork filled out by job-site.The evaulation of the jury , by listening the presentations of students related with their training and by asking questions. According to the assessment made by the jury,giving the 2nd midterm exam. | Name-Surname: E-mail: Tel: | Computer Engineering |