

FIRAT UNIVERSITY COLLEGE OF TECHNOLOGY DEPARTMENT OF SOFTWARE ENGINEERING

Course Descriptions

DERS İÇERİKLERİ (COURSE CONTENTS)

Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
TRD109	Turkish Language I	2	0	2	2
Course Contents					
Definition of the language, The place and importance of language as a social institution in life, Place of Turkish language among world languages, The development of the Turkish language and the historical periods, current situation of Turkish language and spread areas, Vowels in Turkish and classification of Turkish audio features and sound knowledge about the rules, knowledge of syllables, spelling rules and practice, punctuation marks...					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YDI107	English I	2	0	2	2
Course Contents					
Simple Present Tense, Articles, Numbers, Present Progressive Tense, Possessive Adjectives, can, Singular and Plurals, How Many, How Much, Some, Any, A Little, A Few, Some Prepositions.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
FIZ111	Physics I	3	2	4	6
Course Contents					
Vectors, balance, moment of a force, linear motion, Newton's second law, plane motion, work and energy impulse and momentum, rotational motion, elasticity, harmonic motion.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
MAT161	Mathematics I	4	0	4	6
Course Contents					
Real and complex numbers, sentences, permutation, calculations of inversion and combination, probability, group, ring, vector spaces, length, angle and projection calculations, matrices and determinants, linear equation systems.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT111	Algorithm and Programming I	3	2	4	7
Course Contents					
Problem solving. Input-Output process. Algorithm design. Algorithms certainty, finitude, efficiency, input-output. Constants, variables and expressions. Arithmetic, relational and logical processors. Input-output statements. Condition and Repetition. Vector and matrix representations. Character information operations. Subroutine and function routines. Recursion. Structural applications of a programming language.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT113	Introduction to Computer Science	3	2	4	7
Course Contents					
Detailed examination of the coding phase of the software development life cycle. The design of program logic. Programming languages. Introduction to Object-oriented methods. Database management systems. Computer networks and communication. Internet and World Wide Web. Programming technologies for the Web. Computers and security. Computers and social issues.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
TRD110	Turkish Language II	2	0	2	2
Course Contents					
Turkish affixes and their applications, general information about the composition, essay writing and implementation of the plan, adjectives and verbs, composition, expression and its application, use of adverbs in Turkish.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YDI108	English II	2	0	2	2
Course Contents					
Simple Past Tense, Auxiliary Verbs (Be, Do), Must, Have to, Has to, Going to From, Adverbs of Time, Regular and Irregular Verbs, Possessive Pronouns					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
FIZ112	Physics II	3	2	4	6
Course Contents					
Electricity, electrostatics, Coulomb's law, electric field, potential, capacitance, properties of dielectric, electrokinetic, current, and resistance to direct current circuits, alternating currents					

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Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
MAT162	Mathematics II	4	0	4	6
Course Contents					
Definition and types of functions, the absolute value functions, the full value functions, trigonometric functions, signal functions and their graphs, exponential and logarithmic functions and applications, sequences, continuity and limit, derivative, differential, and about the account applications, integration.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT112	Algorithm and Programming II	3	2	4	7
Course Contents					
Introduction to Object Oriented Programming and proper presentation of a programming environment. The basic language concepts (expressions, data types, variables, control structures, arrays, ...). Divide and Resolve Method. Modular software development (methods and classes). Class Variables and Local Variables. Form Elements. Event Driven Programming. Dynamic Arrays. Linked Lists. Search and Ranking Algorithms. Files. Selecting the appropriate structures algorithms. Development of effective algorithms.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT114	Principles of Software Engineering	3	2	4	7
Course Contents					
The scope of software engineering. Software development life cycle models. Software process. Software teams. Software tools. Software testing. Modules and objects. Re-usability and portability. Planning, cost and time estimation. Requirements. Classical analysis. Object-oriented analysis and design. Design types and object-sided design. Implementation and Integration. Maintenance of software product after delivery.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
AIT209	Ataturk's Principles and the Historical Revolution I	2	0	2	2
Course Contents					
The course covers the collapse of the Ottoman Empire and the causes of Turkish revolution, the disintegration of the Ottoman Empire, Armistice cease-fire agreement and subsequent events, situation of the country in occupation and response of Mustafa Kemal, M. Kemal to Samsun, and the opening of the last Ottoman Deputies Assembly, the opening of Parliament and get into the hands of the management of the liberation war.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT211	Discrete Structures I	2	2	3	5
Course Contents					
Fundamentals of discrete mathematics. Functions. Relations. Sets and simple proof techniques. Boolean algebra. Propositional logic. Digital logic. Elementary number theory. Counting the foundations of the concept.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT213	Vocational English I	2	0	2	3
Course Contents					
English equivalents of the main parts of the computer, the computer equivalents of English abbreviations and definitions used in the field, operating systems' English descriptions, classifications and definitions of microprocessors, network structures, cause-effect structures, adjective and noun clauses, conjunctions, passive sentences, causative sentences when used in academic publications, sentence structures, academic terms. Articles translate translation of parts of professional books, translation of user manuals.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT215	Logic Circuits I	3	2	4	6
Course Contents					
Digital Systems, Combinational Logic, Sequential Logic, register, and counters					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT217	Programming Languages	3	2	4	6
Course Contents					
Fundamental concepts in programming languages and basic programming paradigms, Pascal, C, C++ and Java programming languages and its variety of structures.					

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Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT219	Data Structures	3	0	3	4
Course Contents					
Introduction to Data Structures. Introduction to the Java programming language. Recursion. Stacks, Queues and Lists. Trees. Binary Trees and Balanced Trees. Operations on Trees. Comparison of Algorithms. Time and Location complexity. Sorting and Searching. Graph.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT221	Engineering Mathematics	3	0	3	4
Course Contents					
Differential equations, First order ordinary differential equations, Linear differential equations, Separable Equations, Euler Homogeneous Equations, Exact differential equations, Bernoulli Differential equations, Riccati Differential Equations, Engineering applications of first order ordinary differential equations, Second Order Differential equations, Undetermined Coefficients method, Variable Coefficients method, Initial and Boundary Value Problems, Laplace transformation, Review of Improper Integrals, Solving Initial Value Problems by using Laplace Transform.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
AIT210	Ataturk's Principles and the Historical Revolution II	2	0	2	2
Course Contents					
Abolition of the Caliphate, Progressive Republican Party and Takrir-i-Sukun period, Education Revolution, the Cultural Revolution, the letter revolution, revolution of Turkish history, Turkish language revolution, economic congress in Izmir, pass a multi-party life, women's rights revolution , hat, costume and dress reform , foreign policy of the Republic of Turkey, Ataturk's principles, political events, government and parliament relations between the Istanbul government, military developments, the Treaty of Kars, Ankara Agreement, Offensive, Mudanya truce, the removal of the Ottoman reign, the Lausanne peace treaty.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
MAT214	Linear Algebra	2	0	2	4
Course Contents					
Proposition Logic and Set Theory. Functions of Mathematical Methods and Algorithms of proof. Number Theory and Sequences. Induction and Recursion. Counting. Discrete Probability. Relations. Boolean Algebra. Graph Theory. Trees.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT214	Vocational English II	2	0	2	3
Course Contents					
Vector Spaces, Null space, colon, space, linearly dependent and linearly independent vectors, linear transformations, eigenvalues and eigenvectors, diagonalization, inner product spaces, orthogonal projection, Gram-Schmidt method, inner product space applications, Matrix algebra, Systems of linear equations, a set of solutions to systems of linear equations, Size and Rank Determinants,					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT222	Formal Languages and Automata Theory	3	2	4	6
Course Contents					
Theory of mathematical models of computing devices through the study of abstract machine and corresponding formal languages. Formal languages, grammars, finite state machines, regular sets, regular expressions, limitations of finite state models, pushdown automata, context free languages, Turing machines, effective computability, unsolvable decision problems.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT218	Object Oriented Progr.	3	2	4	6
Course Contents					
Efficient and flexible object-oriented software development, object-oriented programming concepts, the fundamentals of the C# or Java programming language, inheritance, polymorphism and dynamic binding, the concept of design patterns, implementation of some design patterns.					

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Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT220	Economy	2	0	2	4
Course Contents					
What is science? Economy and its problems, purpose of the production unit, production factors 'period' concept, the production function and the co-product curves, returns to scale, the law of diminishing productivity, decision-making related to long-term, short term and long-term costs, production unit, revenue, profit maximization and production unit, the principle of balance, presentation, production unit, the curve shift, presentation flexibility, and purpose of the consumer unit, consumer unit balance, the concept of money, the co-benefit curves, budget line, the consumer behavior explained with the help of co-benefit curves and budget line, the consumer unit, the request function of the curve of the total request, the request elasticity, price formation and markets, perfect competitive markets, monopoly markets, imperfectly competitive markets, markets of production factors.					
Code	NAME	THEORETICAL	PRACTICE	CREDIT	ECTS
YMT212	Numerical Analysis	2	2	3	5
Course Contents					
Mathematical modelling and solution of engineering problems. Programming and software, error analysis. Approximation and interpolation, Solutions of linear equations, solutions of nonlinear equations. Optimization, curve fitting. Numerical differentiation, numerical integration. Solution of ordinary differential equations, solutions of partial differential equation. Fourier series and numerical simulation.					