| ISTANBUL KÜLTÜR UNIVERSITY | | | | |
|---|---|---|---|---|
| **DEPARTMENT OF COMPUTER ENGINEERING, COURSE CONTENT** | | | | |
| **Course Code** | **Semester** | **Course Name** | **LE/RC/LA** | **ECTS** |
| *CSE1001* | *1* | *Programming I* | *2/0/2* | *8* |

Introducing C, C Fundamentals, Formatted Input/Output, Expressions, Selection Statements, Loops, Basic Types, Arrays, Functions, Program
Organization, Flowcharts

| **Course Code** | **Semester** | **Course Name** | **LE/RC/LA** | **ECTS** |
|---|---|---|---|---|
| *CSE1003* | *1* | *Introduction to Computer Engineering* | *2/0/2* | *5* |

Introduction of the course, course syllabus, grading, office hours, History of data storage (from stone to silicone); and early history of computing, Data Storage (Number systems; IEEE std 754 numbers, limits & precision; alphabetical data ISO8859, UNICODE; image data JPEG; MPEG; Parity bit; ), Operating Systems (Operating System; BIOS, OS utilities, directory; ) alphabetical data ISO8859, UNICODE; Networking and Internet, Algorithms; Pseudo codes and sByss English; Algorithm testing on SVC ; Programming Languages (history Programming Languages, current important languages // hello world ), a brief visit to Software Engineering and Computer Engineering topics :, Intr. to Software Engineering ( ), Intr. to Data Abstraction ( ), Intr. to Database Systems ( ), Intr. to Computer Graphics ( ), Intr. to Artificial Intelligence ( ), Intr. to theory of Computation ( ).

| **Course Code** | **Semester** | **Course Name** | **LE/RC/LA** | **ECTS** |
|---|---|---|---|---|
| *PHY1001* | *1* | *Physics I* | *2/0/2* | *7* |

Units, Physical Quantities, and Vectors, Motion Along a Straight Line, Motion in Two or Three Dimensions, Newton's Laws of Motion, Applying Newton's Laws, Work and Kinetic Energy, Potential Energy and Energy Conservation, Momentum, Impulse, and Collisions, Rotation of Rigid Bodies, Dynamics of Rotational Motion, Equilibrium.

| **Course Code** | **Semester** | **Course Name** | **LE/RC/LA** | **ECTS** |
|---|---|---|---|---|
| *MCB1001* | *1* | *Calculus I* | *4/0/0* | *7* |

Numbers, Inequalities, and Absolute Values / Coordinate Geometry and Lines / Graphs of Second-Degree Equations / Trigonometry, Four Ways to Represent a Function / Mathematical Models: A Catalog of Essential Functions / New Functions from Old Functions, The Limit of a Function, Calculating Limits Using the Limit Laws/ The Precise Definition of a Limit, Continuity, Derivates and Rate of Change, The Derivative as a Function / Differentiation Formulas,Derivatives of Trigonometric Functions / The Chain Rule / Implicit Differentiation, Inverse Functions / Exponential Functions / Logarithmic Functions, Derivatives of Logarithmic Functions / Inverse Trigonometric Functions, Hyperbolic Functions / Indeterminate Forms and l'Hospital's Rule, Maximum and Minimum Values / The Mean Value Theorem , How Derivatives Effect the Shape of a Graph / Limits at Infinity; Horizontal Asymptotes, Summary of Curving Sketching.

| **Course Code** | **Semester** | **Course Name** | **LE/RC/LA** | **ECTS** |
|---|---|---|---|---|
| *ATA 1001* | *1* | *Atatürk's Principles and History of Turkish R* | *2/0/0* | *2* |

Check course curriculum for details:
http://www.iku.edu.tr/EN/ects_bolum.php?m=1&p=11&f=4&r=0&ders_id=1074&ects=ders_detay

| **Course Code** | **Semester** | **Course Name** | **LE/RC/LA** | **ECTS** |
|---|---|---|---|---|
| *TR1001* | *1* | *Turkish I* | *2/0/0* | *2* |

The importance of the language and general information about it, as a beginning to writing lessons the concept of an essay and the items found with, the position and importance of the language as a social institution in the society, the sentence and its types as being the basic item of an essay, planning and types in essay, the rules of writing a petition and its application, the anecdote and article and telling the difference between them, mother tongue, official language, special language and areas of their usage, finding the features of a story depending on the knowledge of story types and texts, comprehending the aesthetical sides of the novel or theatre, classifying World languages and the position of the Turkish language among them, essay and defining its features using texts.

| **Course Code** | **Semester** | **Course Name** | **LE/RC/LA** | **ECTS** |
|---|---|---|---|---|
| *CSE 1101* | *1* | *Academic English for Computer Engineers I* | *3/0/0* | *3* |

Introduction, introducing yourself, giving your name and address; how to start a conversation, present simple of be +,-,?, classroom language, imperatives;introducing family, possessive 's, demonstratives; asking and giving e-mail and website addresses, filling a form, talking about daily routines, Nationalities and countries, Prepositions of place (from, in, near), Present Simple Tense (+,- ?) Telling the time and date, asking and talking about free time activities, Object Pronouns, describing a person using adjectives, countable and uncountable nouns, describing a place (there is/there are), hotel facilities and furniture, quantifiers (some, a lot of, much, many), booking a hotel, giving orders in a restaurant (Could I have...), talking about types of food, making requests, writing a paragraph about what you eat/would like to eat.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE2002 | 2 | Programming II | 2/0/2 | 8 |

Course Introduction and Syllabus, Pointers, Pointers and Arrays, Strings, Structures, Unions, and Enumerations, Advanced

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE2094 | 2 | Chemistry | 2/0/2 | 5 |

Matter and Its properties, Matter and Its properties, Thermochemistry, Spontaneous Change-Entropy and Gibbs Free Energy, Electrons in Atoms, The Periodic Table and Some Atomic Properties, Chemical Bonding I-Basic Concepts, Chemical Bonding II-Additional Aspects, Intermolecular Forces: Liquids and Solids, Main-Group Elements I: Metals Ch.22 Main-Group Elements II: Nonmetals and Hydrogen, The Transition Elements, Electrochemistry, Nuclear Chemistry.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MCB1002 | 2 | Calculus II | 4/0/0 | 7 |

Antiderivatives, The Indefinite Integral, Sums and Sigma Notation, Areas as Limits of Sums. The Definite Integral, Properties of the Definite Integral. The Fundamental Theorem of Calculus. The Method of Substitution, Integration by Parts. Integrals of Rational Functions, Inverse Substitutions. Areas of Plane Regions. Improper Integrals. Volumes by Slicing-Solids of Revolution, Arc Length and Surface Area. Parametric Curves, Smooth Parametric Curves Their Slopes, Arc Lengths and Areas for Parametric Curves. Polar Coordinates and Polar Curves. Slopes, Areas, and Arc Lengths for Polar Curves. Sequences and Convergence. Infinite Series, Convergence Tests for Positive Series, Absolute and Conditional Convergence. Power Series, Taylor and Maclaurin Series.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| PHY2001 | 2 | Physics II | 2/0/2 | 7 |

Electric and Gauss' Capacitance Dielectrics, Current,Resistance,Electromotive Force, Current,Resistance,Electromotive Force, Direct-Current Circuits, Magnetic Field and Magnetic Forces, Magnetic,Sources of Magnetic Field, Electromagnetic Induction, Inductance.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ATA2001 | 2 | Atatürk's Principles and History of Turkish Revolution II | 2/0/0 | 2 |

Check course curriculum for details:

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| TR2001 | 2 | Turkish II | 2/0/0 | 2 |

The benefits of travel writing and examples. The effects of conversation on knowledge and thinking and examples of conversation. What degeneration of the language is and the ways to protect the language from degeneration. The genre of theatre and examples. The features, beauty, defect and richness of Turkish. The differences between feature article and interview and examples from texts. The features of criticism and examples. Atatürk's thoughts about Turkish and his studies. The rules of writing a report and sample texts. Writing a personal background/biography about oneself. Speech as a speaking composition and examples. A spontaneous five minute-speech. Term evaluation (What did I learn Turkish lessons?)

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE 2102 | 2 | Academic English for Computer Engineers II | 3/0/0 | 3 |

How to talk about free-time activities; the weather. How to describe abilities, can, can't, adverbs; how to talk about likes and dislikes. How to invite and reply. How to say what's happening, present continuous; describe actions, present simple and present continuous. How to ask for transport information; describe a holiday; continue a conversation; talk about a career. Past simple regular and irregular. How to talk about what happened; make suggestions; compare things. Comparatives and superlatives. How to make an appointment; talk about future arrangements and intentions. Present continuous.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE3021 | 3 | Digital Design I | 2/0/2 | 6 |

Introduction to the course, Binary Numbers, Number Base Conversion, Complements, Signed Numbers, Binary Codes, Introduction to Boolean Algebra - Lab1, Theorems & Properties of Boolean Algebra, Boolean Functions, Canonical and Standard Forms, Other Logic Operations - Lab 2, K-Maps, Simplification of Boolean Functions, Product of Sums Simplifications - Lab 3, Don't-Care Conditions, NAND and NOR Implementations, Exclusive-OR - Lab 4, Analysis of Combinational Circuits, Design of Combinational Circuits, Binary Adders and Subtractors - Lab 5, Multipliers, Magnitude Comparators - Lab 7, Decoders, Encoders, Multiplexers, Introduction to Sequential Logic - Lab 8, Latches, Flip-Flops - Lab 9, Analysis of Sequential Circuits - Lab 10, Design of Sequential Circuits, Recapitulation.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE3013 | 3 | Discrete Structures | 2/0/2 | 9 |

Fundamental Principles of Counting, Permutations and Combinations, Binomial Theorem, Multinomial Theorem, The Pigeonhole Principle, Inclusion- Exclusion Principle, Generating Functions, Recurrence Relations, Introductıon to Number Theory, Applications of Number Theory, Cryptography, Introduction to Graph Theory, Planarity, Colorings, Applications.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE3209 | 3 | Academic Writing I | 2/0/0 | 3 |

 Structure and Cohesion, Description: Process and Procedure,  Description: Physical,   Narrative,  Definitions,Exemplification, Classification,  Comparison and Contrast,  Cause and Effect.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE3003 | 3 | Object Oriented Programming | 2/0/2 | 8 |

Course Introduction and Syllabus, Classes and Data Abstraction, Inheritance and Composition, Pointers, Classes, Virtual Functions, Abstract Classes, and Lists, Overloading and Templates, Exception Handling, Basic Elements of Java.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MCB1004 | 3 | Linear Algebra | 2/2/0 | 6 |

Matrices; Matrix Operations, Properties of Matrix Operations, Special Types of Matrices. Solving Linear Systems; Elementary Row and Column Operations; Row Echelon Form of a Matrix; Gauss Elimination and Gauss-Jordan Method. Homogeneous Systems. Elementary Matrices and Finding the Inverse of a Matrix by Using Elementary Operations. Determinants; Definition and Properties of Determinants. Cofactor Expansion; Finding Inverses by Using Cofactors. Cramer's Rule. Rank of a Matrix. Vector Spaces: Definition; Subspaces. Span and Linear Independence.  Basis  and Dimensions. Eigenvalues and Eigenvectors of a Square Matrix. Diagonalization and the Cayley–Hamilton Theorem. Linear Transformation. Review of  Basic Concepts.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE4061 | 4 | System Analysis and HCI Design | 2/2/0 | 5 |

Introduction to System Analysis; Project Initiation; interview with potential user, search for application area and preparing  close ended and open end questions; Requirement Identification from user interview; search for application area for international standards; search for application  area for government reports and year-end reports. prototype HCI design for discussion; Process Modeling including top management reports and year end reports; Full Process Modeling with Data Flow Diagrams ; re-search for application area's international standards and legal reports before defining data units; Basic user human factors , Individual cognition , General HCI design principles. Concept of multilingual user interaction; Run-time configuration and internationalization, GUI builders, Use of modes, navigation, Coding techniques and visual design

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE4024 | 4 | Microprocessors | 2/0/2 | 5 |

Types of microprocessors and microcontroller and general structure. Architecture of microprocessors and internal structure: Flags, etc. Fundamentals of assembly languages. Addressing modes of a microprocessor or a microcontroller (8051). Movement microprocessors or the microcontroller and examples/applications. Branch Commands: Conditional branch commands and examples/applications.  Arithmetic commands such as ADD, SUBB, DIV, and etc.  Examples/applications.  Flowchart microprocessors or the microcontroller, data transfer and signaling. Timers and counters units. Examples and applications. BCD. Logic and compare instructions, rotating and shifting. Addressing modes and related instructions.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE4014 | 4 | Data Structures and Algorithms I | 2/0/2 | 8 |

Introduction to the Course. Complexity Analysis. Examples about Complexity Analysis. Linked Lists. Doubly Circular Linked List. and Sorting Algorithms. Binary Tree. Graph. STL Library. Hashing.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE4023 | 4 | Computer Organization and Architecture | 2/0/2 | 5 |

Introduction, Computer Evolution and Performance. Computer Function and Interconnection, Cache Memory. Internal Memory Technology. Input/Output, Operating System Support. Computer Arithmetic. Instruction Sets: Characteristics and Addressing Modes and Formats. Processor Structure and Function. Reduced Instruction Set Computers. Instruction Level Processors. Control Unit Operation. Microprogrammed Control. Parallel Processing. Multicore Computers.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE4050 | 4 | Signals and Systems for Computer Engineers | 2/0/2 | 5 |

Introduction to Signals. CT and DT signals and basic operations on signals. Exponential, unit impulse and unit step functions. Linear Time-Invariant Systems  and  Convolution.  LTI System  Properties. Fourier Series  Representation of CT  Periodic Signals. The Fourier Transform. Properties of the Continuous-Time Fourier Transform. The Discrete-Time Fourier Transform. Properties of the Transform. Sampling.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE5001 | 5 | Web Programming | 2/0/2 | 6 |

Web Programming Overview. Introduction to HTML5, CSS and Javascript, Introduction to ASP.net and .net Framework. ASP.net AJAX, WCF.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE5031 | 5 | Operating Systems | 2/0/2 | 5 |

Introduction to Operating Systems: Definition, History, Hardware Overview. Basic Operating Systems Concepts. API (Application Operating System Types. Managing Processes and Threads. Deadlocks. Memory Management. Input / Output Management. File Systems. Operating Systems for Mobile Systems.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE5041 | 5 | Database Design and Development | 2/0/2 | 6 |

Overview of Database Systems -Purpose of a database system -Database Architectures. Database Modeling -Entity-Diagrams –Mapping. Relational Model -Structure of the model -Relational algebra. Normalization -Functional Dependencies -Database İnteraction -SQL -Queries -DDL Statements. Storage and File Structures -File organization -Organization of records in a Structures (Cont.) -Storage access and Indexing -B Trees –Hashing. Query Processing and optimization -Query evaluation -Cost Management -Transaction concepts -Concurrent execution, serializability. Transaction Management (Cont.) -Lock mechanisms -Database recovery. Distributed Database Systems.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MCB1007 | 5 | Introduction to Probability and Statistics | 4/0/0 | 6 |

Sets, Combinatorial Methods, Binomial Coefficients. Sample Spaces, Event, The Probability of an Event, Some Rules of Probability, Independent Event, Bayes' Theorem. Random Variables, Discrete Probability Distributions. Continuous Random Distributions. Marginal Distributions, Conditional Distributions. The Expected Value of a Random Variable, Moments. Generating Functions. Product Moments, Conditional Expectation. The Discrete Uniform Distribution, The Bernoulli Distribution, The Negative Binomial and Geometric Distribution, The Hypergeometric Distribution. The Poisson Distribution, The Uniform Distribution, The Normal Approximation to the Binomial Distribution, The Normal Approximation to the Poisson Distribution.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE5091 | 5 | Internship I | 0/0/0 | 2 |

20-days internship in a company

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE6032 | 6 | Computer Networks | 2/0/2 | 7 |

Introduction. The Physical Layer. Data Link Layer, Error Detection and Correction, Data Link Protocols. Sliding Window Protocols, Channel Allocation Protocol, Multiple Access Protocols, Ethernet, Wireless LANs. Broadband Wireless, Bluetooth, Data Link Layer Layer Design, Routing Algorithm, Congestion Control Algorithms. Quality of Service, Internetworking, Network Layer in the Elements of Transport Protocols. UDP, TCP, Performance Issues. DNS, Electronic Mail, The World Wide Web, Multimedia. Algorithms, Digital Signatures, Management of Public Keys. Communication Security, Authentication Security. Email Security, Web Security.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE6064 | 6 | Software Engineering | 2/0/2 | 6 |

Introduction to Software Engineering. The Software Process. Software Lifecycle Models. Requirements. Specification.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MCB1008 | 6 | Numerical Methods | 2/2/0 | 6 |

Review of Calculus, Round-off Errors and Computer Arithmetic. The Bisection Method, Fixed-Point Iteration. The Newton's Method, The Secant Method. The Method of False Position, Error Analysis for Iterative Methods. Interpolation and the Lagrange Polynomial. Data Approximation and Neville's Method. Divided Differences. Forward, Backward and Centered Differences. Numerical Differentiation. Richardson's Extrapolation. Elements of Numerical Integration, the Trapezoidal and Simpson's Rule. Newton-Cotes Formulas. Composite Numerical Integration. Improper Integrals.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE7092 | 7 | Internship II | 0/0/0 | 2 |

20-days internship in a company

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE7311 | 7 | Presentation Skills | 2/0/0 | 2 |

The informative speech. Performance of informative speeches. The layout speech. Performance of layout speech. The demonstration speech. Performance of demonstration speech. Effective Visuals. Explaining Visuals. The introduction. The body. The conclusion. Final Performance.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE7093 | 7 | **Engineering Economics** | 2/0/0 | 2 |

Introduction to engineering economy. Principles of engineering economy. Introduction to design process. Introduction to cost accounting. Investigation of origins of interest and applications of money time relationships. Introduction to opportunity cost. Evaluating projects by using certain methods such as cost and benefit and the break even methods. Application of minimum attractive rate of return, internal rate of return, external rate of return, present worth and annual worth methods. Different depreciation methods in cost accounting. Evaluation of successful and unsuccessful projects. Sensitivity analysis and replacement analysis. Applications of money-time relationships Project financing and feasibility studies. unsuccessful projects. Sensitivity analysis and replacement analysis. Applications of money-time relationships Project financing and feasibility studies.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE8090 | 8 | **Graduation Project** | 2/8/0 | 12 |

Determining the Project. Initiating. Literature Review. Planning and Requirements. Analysis and Design. Implementation. Testing and Verification. Documentation. Pre-evaluation and Testing the System. Meeting and discussion with supervisor for finalized your Project. GP Presentation. SUBMISSION OF A COMPLETE PROJECT REPORT.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0403 | - | **Graphical User Interface Design and Development** | 2/0/2 | 6 |

Introduction to computers and Programming, problem solving techniques. Computing Systems and Software Development Method. Introduction to Algorithms: Algorithm definition, representation, pseudu-code definition, Repetition control structures, flow-charts and symbols of flow-charts. Flow-chart and algorithm examples, comparison of flow-charts and pseudocode. Introduction to Matlab programming: Matlab language elements, variable definitions, memory concepts. Array and matrix operations in Matlab. Simple data types, arithmetic expressions, type casting, math library functions. Plotting functions with Matlab. File Input/Output operations in Matlab. Common Programming Errors: syntax, run-time, logical errors. Matlab Program Control: Selection structures (if and switch statements, nested if statements). Matlab Program Control: Repetition and loop structures (for and while statements, nested loops). Matlab Functions: function definition and function call. Symbolic operations in Matlab.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0404 | - | Game Programming | 2/0/2 | 6 |

History and evolution of computer and video games, game system architecture, game engine components and structure, content management: I/O Basics, File formats, Mathematical Concepts, Graphics: Matrices and Transforms, Interpolated Rendering, Graphics: Skeletal Animation, Lightning, Introductory artificial Intelligence, Physics: Movement and Collision Detection and Resolution, Physics: Raycasting, Artificial Intelligence: Pathfinding Overview, Audio, Sound and Music, Multiplayer Game: Computer Networks, Performance Issues.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0405 | - | Programming Languages | 2/0/2 | 6 |

Introduction. Syntax & Semantics. Lexical & Syntax Analysis. Names, Bindings, Type Checking & Scopes, Data Types. Expressions, Assignment,Statements, *Project Assignment. Statement Level Control Structures. Subprograms. Abstract Data Types & Encapsulation. Support for Object Oriented, Programming. Concurrency and Exception Handling. Functional Programming Languages, Logical Programming Languages.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0406 | - | Mobile Programming | 2/0/2 | 6 |

Introduction to Android. Android Market and App Business Issues. First Application with the ADT Plugin. Building an Android App with Java. SharedPreferences, Buttons, Nested Layouts, Intents, AlertDialogs, Inflating XML Layouts and the Manifest File. Assets, AssetManager, Tweened Animations, Handler, Menus and Logging Error Messages. Listening for Touches and Gestures. AnimatorListener, Thread-Safe Collections, Default SharedPreferences for an Activity. Two-Dimensional Graphics, SensorManager, Multitouch Events and Toasts. ListActivity, AdapterViews, Adapters, Multiple Activities, SQLite, GUI Styles, Menu Resources. Google Maps API, GPS, LocationManager, MapActivity, MapView and Overlay. Gallery and Media Library Access, Built-In Content Providers. Serializing Data, Taking Pictures with the Camera and Playing Video. Web Services.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0415 | - | Data Structures and Algorithms II | 2/0/2 | 6 |

An algorithm that finds a word via state machine diagram. Examples. Introduction to graph theory and representations of graphs. Types of graphs, epresentation of graphs on computer memories. Problems that can be solved using graph theory: Graph coloring, shortest path, spanning tree, and etc. Graph oloring: Powel and Welch algorithm. Different types of examples using graph coloring. Shortest path algorithms and behavior of Dijkstra's algorithm. Aplication of Dijkstra's algorithm on a map. Algorithms of minimum spanning tree. Kruskla's algorithm. Big O notation. Compression algorithms and programs. Huffman coding tree and it's sample applications: Characters usage frequencies and Huffman tree.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0407 | - | Mobil Programing II | 2/0/2 | 6 |

Restricted user interface of mobile environment, limited connectivity, basic limitation handling, Memory awareness, power management Security and privacy in mobile applications, Mobile environments, and privacy technology, Addressing and routing to mobile users, Disconnection - data synchronization, Mobile atabases, Mobile Databases (2), Permanent storage, Mobile security, Location / contact information, Multimedia services and new technologies

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0408 | - | Programing III | 2/0/2 | 6 |

Introduction to Java Programming Language, Object Oriented Programming with Java, Class Variables, Methods, Fundamentals of Programming Language, Control Structures, Sequences., Detailed handling of classes and objects. Data types, Generic and containers. Inheritance in Java, sub and internal classes. Advanced eredity and generics; Abstract classes, interfaces, collections. GUI development with Swing. Data structures. Regular expressions. Contradictory case management. Java input / output, files and streams, serialization of objects. Multiple threads, other topics.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0191 | - | Computer Programming with Matlab | 4/0/2 | 8 |

Introduction to computers and Programming, problem solving techniques. Computing Systems and Software Development Method. Introduction to Algorithms: Algorithm definition, representation, pseudu-code definition, Repetition control structures, flow-charts and symbols of flow-charts. Flow-chart and algorithm examples, comparison of flow-charts and pseudocode. Introduction to Matlab programming: Matlab language elements, variable definitions, memory concepts. Array and matrix operations in Matlab.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0426 | - | Robotics | 2/0/2 | 6 |

Introduction. Robotic Systems. Robotic System Problems. Coordinate Transmission. Link Coordinate. The Arm Equation. Forward Kinematics. Inverse Kinematics. Jacobian Manipulators. Manipulator Dynamics. Euler Dynamic Model. Mechanic Design.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0427 | - | Computer Architecture | 2/0/2 | 6 |

Introduction. Fundamentals of Quantitative Design and Analysis. Computer Abstraction and Technology. Instructions: Language of Computer. Assessing and Understanding Performance. The MIPS Assembly Language, usage of MARS. MIPS Processor Essentials. Design of MIPS Processor Components, Introduction to LOGISIM. Advanced Components in MIPS Processor. MIPS Processor Single Cycle Implementation. Critical Paths on MIPS Processor, Single Cycle

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0433 | - | Mobile and Wireless Networks | 2/0/2 | 6 |

Introduction to Wireless Networks, Wireless Communication, Modern Wireless Technologies, Introduction to Cellular Networks, Handoff Mechanism in Cellular Networks, Bluetooth and InfraRed Technologies, Satellite Networks, Ad Hoc Networks, Sensor Networks, Mobility in Sensor Networks.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0434 | - | **Networks Security** | 2/0/2 | 6 |

The need for seecurity, threats, attacks, risk management (business needs, threat enumeration, denial-of service attacks, malware, hacking attacks). Basic Cryptography ( symmetric encryption, message authentication, public-key encryption, digital signatures and key management, random and pseudorandom numbers). Authentication Techniques(password based authentication, token-based authentication, biometric authentication, remote user authentication, security issues for user authentication). Access Control ( access control principles, subjects, objects, rights, discretionary access control, role-based access control, physical security, wireless Lan security). Windows Host security (installation, and patching, services, managing users and groups, permissions, advanced hardening techniques, testing for vulnerabilities). Linux Host security (installation, and patching, services, managing users and grou (the need for firewalls, firewall characteristics, types of firewallls,firewall basing, firewall location and configuration). Intrusion Detection  ms(intruders, host-based IDS, distributed host-based IDS, network-based IDS, distributed adaptive intrusion detection, honeypots). Intrusion Prevention Systems (IPS). Internet Security Protocols and standards (SSL/TLS, IPv4/IPv6, PPP, PPTP and L2TP, IPsec, Kerberos, X.509).

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0429 | - | **Cloud Computing and Security** | 2/0/2 | 6 |

Fundamentals of Cloud Computing and Architecture, Security Design and Architecture for Cloud Computing, Secure Isolation of Physical and Logical Infrastructure, Data Protection for Cloud Infrastructure and Services, Access Control for Cloud Infrastructure Services, Monitoring, Control and Management, Introduction to Cloud Design Patterns, Cloud Introduction to Identity Management in Computing, Cloud Computing Security Design Patterns - I, Cloud Computing Security Design Patterns - II, Cloud Computing Policy, Compliance and Risk Management, Cloud Compliance Assessment and Reporting - Case Analysis, Cloud Service Providers - Technology Review

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0436 | - | **Cyber Systems and Information Security** | 2/0/2 | 6 |

 Information (Computer) Forensics and History, Modern Cryptography and Its Applications, Security Technologies Approaches, Network Security (Network Vulnerability Analysis, Protocol Vulnerability Analysis, Network Applications Vulnerability Analysis, Firewall, Intrusion Detection and Prevention Systems etc.),Peer to Peer Security,  Security in Networking Applications, Security Issues in Private Networks and ISP Networks, Security and Privacy in Multimedia Applications (IPTV, VoIP etc.), Web Security(Web Applications Vulnerability Analysis, Browser Security, Internet Security),  Security and Privacy in Wireless Networks (Ad Hoc and Sensor Networks Security, WiFi, 3G, 4G, WIMAX etc.),  Security and Privacy in Mobile Networks and Services, Secure Cloud Computing,  Security in Smart Technologies (RFID Security, RFID e-Passports Security, Security on Smartcards),E-Commerce and E-Government Security, Security on Social Engineering Applications

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0437 | - | **Data Communications** | 2/0/2 | 6 |

Data Communications, Data Networks and the Internet,  Explanation of Protocols and Protocol Layers Used in Computer Networks, Fourier Analysis,  Data Communications, Communication Environments, Signal Coding Techniques,  Error Detection, Data Link Control Protocols, Data Link Control Layer,  Multiplexing Techniques, Signal Processing and Error Control, Wireless Communication Techniques,  Wireless Networks

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0409 | - | **Web Programming II** | 2/0/2 | 6 |

Introduction to MVC, MVC Architecture, MVC Design Pattern, Working with Controllers, Model Templates, Model Validation, JQuery Overview, jQuery Techniques, Using JQuery UI, MVC Status Management, Working with URLs and Routing, DevOps Introduction

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0435 | - | **Control Theory** | 2/0/2 | 6 |

Analysis of Modeling Equations. Linear Systems. Stability. Optimal Control. Sliding Modes.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0440 | - | **Artificial Intelligence** | 2/0/2 | 6 |

Introduction to Artificial Intelligence and Intelligence Agents. Solving Problems by searching and Informed search. Constraint Satisfaction and Adversarial Search. Logical Agents. First Order Logic. Inference in First Order Logic. Knowledge Representation. Quantifying Uncertainty. Probabilistic Reasoning,Learning From Examples and Decision Trees. Reinforcement Learning.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0442 | - | Data Warehouses and Data Mining | 2/0/2 | 6 |

Overview of the course (syllabus, teaching methods, sources, outcomes) Introduction and Motivation to Data Mining. Data: Types of Data, Data Quality, Data Preprocessing, Measures of Similarity and Dissimilarity. Exploring Data: The Iris Data Set (Case Study), Review of related and basic Statistics. Exploring Data: Visualization, OLAP and Multidimensional Data Analysis. Dimensionality Reduction (Principle Component Analysis, Factor Analysis) Classification: Basic Concepts, Decision Trees, Model Evaluation (Evaluating the Performance of a Classifier, Methods for Comparing Classifiers) Classification: Alternative Techiques(Bayesian Classifier, Artificial Neural Networks) Classifiation: Alternative Techiques(Support Vector Machines, Ensemble Methods) Association Analysis: Basic Concepts and Algorithms. Association Analysis: Advanced Concepts. Cluster Analysis: Basic Concepts and Algorithms. Cluster Analysis: Additional Issues and Algorithms. Anomaly Detection. Project Presentations.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0443 | - | Machine Learning | 2/0/2 | 6 |

Introduction to the course, overview of the course Syllabus, Introduction to Machine Learning. Supervised Learning: Classification and Linear regression. Supervised Learning: Simple Linear Regression. Supervised Learning: Classification, Simple perceptron. Biological and historical Introduction to Artificial Neural Networks, Linear Classifier, Gradient Descent, Least Mean Square and Perceptron Convergence Algorithm. Learning in Multilayer Perceptron and Backpropagation algorithm. Derivation and application of backpropagation algorithm. Support Vector Machines – Linear. Support Vector Machines – Nonlinear. Clustering - Hierarchical clustering (single and complete linkage, dendogram, nested clusters). Clustering - K-means, Nearest Neigbors, Self- Organizing Maps. Feature Selection and Extraction. Project Presentations.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0444 | - | IT Project Management | 2/0/2 | 6 |

An Overview of IT Project Management, The Business Case, The Project Charter, The Project Team, The Scope Management, The Work Breakdown Structure (WBS), The Project Schedule and Budget, The Risk Management Plan, The Project Communication Plan, The IT Project Quality Plan, Managing ,Change, Resistance and Conflict, Managing Project Procurement and Outsourcing, Project Leadership and Ethics, The Implementation Plan and Project.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0451 | - | Image Processing | 2/0/2 | 6 |

Introduction Digital Image Processing. Image Fundamentals and Human Visual Perception. Image Enhancement in Spatial Domain. Fourier and Wavelet Transforms. Image Transforms. Image Enhancement in Frequency Domain. Edge detection (Prewitt, Roberts, Sobel, Laplacian, Canny, Hoteling) Image Restoration. Image Morphology. Color Image Processing. Image Compression and Coding.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0452 | - | Computer Graphics | 2/0/2 | 6 |

Introduction to OR / LP Models and Model Formulation, LP Models and Model Formulation / Graphical Solution Procedure, Graphical Solution Procedure Simplex Method, Duality, Dual Simplex Method / Sensitivity Analysis, Transportation Problem / Transshipment Problem, Network Models, Integer Programming.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0453 | - | Multimedia Compression and Processing | 2/0/2 | 6 |

Introduction. Entropy Lossless Coding. Statistical Dependence. Arithmetic Coding. Rate Distortion Theory. Quantization. Prediction. Transform Coding. JPEG. JPEG2000. Interframe Coding. Motion Estimation. Motion Compensated Coding. Video Coding Standards.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0462 | - | Software Quality & Testing | 2/0/2 | 6 |

Course Introduction. Foundation Level: Fundamentals of Testing, Testing throughout the software life cycle, Static Techniques, Test design techniques, Test management, Tool support for testing. Advanced Level: Test Basics, Testing Processes, Test Management and Test Techniques, Testing of Software Characteristics and Reviews, Defect Management and Test Process Improvement, Test Tools and People Skills.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0495 | - | Engineering Ethics & Law | 2/0/2 | 6 |

Introduction to Ethics. Ethics for IT Sector and Workers. Ethical Issues. Computer and Internet Crimes. Privacy. Intellectual Property. Patent Rules. Ethic in Turkey

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0496 | - | **Graph Theory & Social Networking** | 2/0/2 | 6 |

Introduction and Orientation, Class Overview. Basic Graph Theory (graph representation of social network data, cliques, connectivity, components, max- flow min-cut, shortest path, spanning trees, degree distribution, power law, random, zipf distributions, scale free, small-world network, preferential attachment, centrality measures). Social Media & Web 2.0-Web Crawling & Data collection (basic concepts, webpage scraping, regular expressions based parsing, XML parsing of RSS feeds). Web Crawling & Data collection (open source tools data Crawling tools, crawling best practices, guidelines, and ethics). Structured Data Extraction (machine learning tools to train data extraction) Unstructured Data Extraction (machine learning tools to train data extraction. Data Visualization Tools -Part I (Pajek Visualization Tool). Application Programming Interfaces (API and hands-on exercises with open-source BlogTrackers)). Data Visualization Tools -Part II (Network Workbench Visualization Tool). Information Integration (disparate and heterogeneous data sources, integrate data from multiple websites) -Information Integration (integrate data from multiple web services and build Mash-ups). Link Analysis (analyzing random network, random walk on graphs, scale-free network, preferential attachment model) Link Analysis (information diffusion, cascade and linear threshold models). Information Retrieval and Web Search (content analysis, similarity and ranking functions). Information Retrieval and Web Search (network analysis, HITS, PageRank). Opinion Mining and Sentiment Analysis.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0497 | - | **Service Science Management & Engineering** | 2/0/2 | 6 |

Overview of Service Science, Management and Engineering. Strategy: Priorities, capabilities, and organizational features. Supply Chain Finance: Concept and Modeling, Designing and Assessing Participatory Public Services for Emerging Markets, Recommendation Algorithms for Implicit Information, Online Strategies for Optimizing Medical Supply in Disaster Scenarios, Evaluating Traffic Signal Control Systems Based on Artificial Transportation Systems, An Approach to Optimize Police Patrol Activities Based on the Spatial Pattern of Crime Hotspots, Bus Arrival Prediction and Trip Planning for Better User Experience and Services, Mass Customization Manufacturing and Its Application for Mobile Phone Production, Cloud of Health for Connected Patients, Service Modeling Optimization and Service Composition QoS Analysis, Urban Traffic Management System Based on Ontology and Multi-agent System.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0448 | | **Big Data Analytics** | 2/0/2 | 6 |

Oral presentation, Laboratory, Project,Big data analytics platforms,Big data storage and analytics,Clustering and classification,Big data analytics Algorithms-II,Spark and Data analytics,Linked big data - Graph computing, Linked big data - Graph analytics,Big data visualisation, Cognitive mobile analysis, Applications, Project presentations

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0454 | | **Computer Vision** | 2/0/2 | 6 |

Image Representation, Linear Operators, Edge, Corner, and Blob Detection, Contour Detection, Parameter Estimation, Correspondence Matching, Camera Projection, Planar Homographies and Image Mosaicing, Object Recognition, Feature Detection and Reduction, Stereo Vision, Motion, Video Change Detection and Tracking, 3D Shape From Shading, Image Classification

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0445 | | **Natural Language Processing** | 2/0/2 | 6 |

Introduction to Natural Language Processing, Language models, N-grams. Grammar and languages. Syntactic Analysis, Regular expressions, Morphological analysis., Corpora for NLP, Machine learning, Text classification., Information retrieval, Text indexing and retrieval, Question answering,Hidden markov Models

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0498 | | **Biomedical Engineering** | 2/0/2 | 6 |

Retrieval and Editing of Biomedical-Related Information,Biological Signals: Origin, Measurement and Processing, Medical Imaging, Telemedicine and Home-Care, Biomechanics of the Cardiovascular System, Musculoskeletal Biomechanics, Biomechanics of the Respiratory System, Bio-nano-technology and Tissue Engineering, Medical Optics, Medical Image Processing, Biomedical Engineering in the Clinical Setting, Artificial Tissues and Organs, Biomedical Engineering Industry of Turkey

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0455 | | **Electrical Circuits** | **2/0/2** | 6 |

Description of the course and introduction. Basic concepts of circuit theory: Voltage, current, Ohm's law, Passive sign convention, power, and energy. Definition of circuit elements: Independent and dependent voltage and current sources. Resistance, construction of a circuit model.Kirchhoff's current and voltage laws, circuit analysis by using Kirchhoff's laws. Simple resistive circuits: Resistors in series, resistors in parallel, voltage divider circuit, current divider circuit.Resistive circuits analysis by "Mesh-current" and "Node-voltage" methods.Thévenin and Norton Equivalent circuits. Delta/Wye Equivalent circuits. Superposition in circuit analysis. Max power transfer. Operational Amplifiers. Energy storage elements: Inductor and capacitor: Principle of operation, volt-ampere relationship, power and energy. Initial conditions of inductors and capacitors. First order RL circuits.Second order RL circuits.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0456 | | **Telecommunication Engineering** | **2/0/2** | 6 |

Overview of data communication and communication engineer, Terminologies, Information on protocol architecture and examples, Data communication networks, digital and analog data, k Signs, error detection and correction, Fundamentals of theoretical knowledge of asynchronous / synchronous transmission and line configuration, Some techniques related to encryption and data communication, Structural functions of mechanisms

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0457 | | **Web Mining** | **2/0/2** | 6 |

Web graphs.Link Analysis I, Link Analysis II, Web crawling, Information Retrieval on the Web: Web search engines, Information Retrieval on the Web: Query and Retrieval, Web Usage Mining, Collaborative Filtering I, Collaborative Filtering II,Latent Factor Models, Hybrid Models

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0458 | | **Evolutionary Computing** | **2/0/2** | 6 |

Introduction to course, Introduction to search and optimization, Local search techniques, Local search techniques, Evolutionary algorithms, Introduction to swarm intelligence, Ant colony optimization, Particle swarm optimization, Artificial immune systems, Working with nature inspired heuristics, Other nature inspired heuristics, Constraint handling, Hybridization,Advanced topics

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0499 | - | **Special Topics in Computer Engineering** | 2/0/2 | 6 |

Course Introduction and Syllabus, The Big Idea, Architectures in Context, Basic Concepts, Designing Architectures, Software Connectors, Introduction to Modelling, Visualizing Software Architectures, Analysis of Software Architectures, Implementing Architectures, Applied Architectures, Introduction to DSSE, Standards.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0463 | - | **Software Quality & Testing** | 2/0/2 | 6 |

A perspective on testing, Boundary value testing,Equivalence class testing, Decision Table-based testing, Model Based Testing for Systems of Systems, Path Testing, Data Flow Testing, Life Cycle-based Testing,Integration Testing, System Testing, Object Oriented Testing, Test Driven Development

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0464 | - | **Advanced Software Testing** | 2/0/2 | 6 |

Testing and Junit, Code Coverage I, Code Coverage II, Test Generation I, Test Generation II, Mutation Testing, Regression Testing, Invariant Generation, Automated Debugging, Program Repair, Tools & Benchmarks I, Tools & Benchmarks II

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0466 | - | **Secure Software Engineering** | 2/0/2 | 6 |

Threat modeling- Threat modeling-II, Risk analysis, Architectural security, Secure coding-I,Secure coding-II, Secure configuration and deployment, Updates and maintenance

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0467 | - | **Software Architecture** | 2/0/2 | 6 |

Basic Concepts The Big Idea Architecture in Context, Introduction to Design Architectural Styles, Layered Architecture Grid Slides Styles and Greenfield Design, Software Connectors Software Connectors in Practice, Introduction to Modelling Modelling and Notations, Visualizing Software Arhitectures,Introduction to the Analysis of Software Architectures, Analysis Techniques Implemeting Architectures, Implementation Techniques Architectural Middleware, Applied Architectures Deployment and Mobility, Designing for NFP Security and Trust, Architectural Adaptation Domain Specific Software Engineering(DSSE)

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0468 | - | **Software Modelling and Design** | 2/0/2 | 6 |

MDSE Principles, MDSE Use Cases, Model-Driven Architecture (MDA), Integration of MDSE in your Development Process, Modeling Languages at a Glance, Developing your Own Modeling Language, Model-to-Model Transformations, Model-to-Text Transformations, Managing Models

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0469 | - | **Special Topics in Software Engineering** | 2/0/2 | 6 |

The Big Idea, Architectures in Context, Designing Architectures, Software Connectors, ntroduction to Modelling, Visualizing Software Architectures, Analysis of Software Architectures, Implementing Architectures, Applied Architectures, Introduction to DSSE, Standards

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| EE3202 | - | **Logic Design** | 4/0/0 | 6 |

Logic Circuit and Basics, Signals and Analog to Digital Conversion, Number Systems and Coding, Boolean Algebra Theorems and Axioms, Reducing Logic Expressions using Boolean Algebra, Reducing Logic Expressions using Karnaugh Map, Combinational Circuit Examples and Applications, Logic Circuit Elements: MUX, decoder, encoder, Programmable Combinational Circuits: PAL, PLA, PROM, EPROM, EEROM etc. Sequential Circuits: asynchronous, synchronous, state diagrams, FFs, Registers, Counters and Memory Elements, Sequential Circuit Design Methods, Sequential Circuit Applications: Sample Designs, Computer Aided Logic Design and Examples.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| EE4401 | - | **Introduction to Telecommunications** | 2/0/2 | 6 |

Introduction, Elements of Communication System, Limitations of Communication Systems, Analog and Digital Messages. Modulation, CW Modulation, Pulse Modulation, The need for modulation, Advantages of Digital Communication over Analog Communication. Signal Analysis and Frequency Spectra:Fourier Series, Fourier Transform (FT), Properties of FT. Frequency Spectra, Amplitude Spectrum, Phase Spectrum, Energy Spectral Density, Power Spectral Density. Amplitude Modulation (AM). AM Modulators and Demodulators. Conventional AM, DSB – AM, SSB-AM, Vestigal Sideband Modulation. Angle Modulation. Frequency Modulation (FM), FM Bandwidth, FM Modulators and Demodulators, Comparison of AM and FM, Information Content and Channel Capacity, Noise in AM Receivers.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| EE0805 | - | Electrical Measurement | 2/0/2 | 6 |

Measurement and parameters Lab1: Introduction to measurement lab, Measurement errors Lab2: Errors in measurement and basic statistical sampling, Systems of unit and standards of Measurement Lab3: DC current and voltage measurement, Direct current indicating instruments Lab4: Resistor characteristics and ohms law, Alternating current indicating instruments Lab5: Basic reference voltage source, Potentiometer circuits and reference voltages Lab6: Measurement using DC bridges, DC bridges and their applications Lab7: Measurement of semiconductor devices, AC bridges and their applications Lab8: Termistor characteristics and temperature controlled circuits, Oscilloscopes Lab9: Oscilloscopes, AC voltage measurement with oscilloscopes Lab10: AC voltage measurement, Measurement errors in oscilloscopes, Temperature Measurements

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| EE0836 | - | Digital Speech Processing | 3/0/0 | 6 |

Explanation on course content, reference books, homework, quizzes, exams. Introduction to speech generation system, Review of digital signal processing. Microphone, data acquisition and MATLAB usage, Introduction to acoustical speech modeling, Time domain processing of speech signals, Autocorrelation and Pitch Frequency estimation, The Short-time Fourier transform for speech, PCM, Adaptive and Differential PCM, Delta Modulation, Linear Predictive Coding (LPC), Speech Recognition by LPC, Speech Synthesis, Speech Recognition

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| IE0607 | - | Industrial Applications of Nanotechnology | 3/0/0 | 4 |

Introduction to Nanotechnology, Materials Science Overview, Synthesis Methods of Nanostructures, Nanostructures: 0D, 1D, and 2D, Characterization,Techniques of Nanostructures, Applications of Nanostructures, Project Presentations.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| IE0608 | - | Introduction to Renewable Energy | 3/0/0 | 4 |

Introduction, Energy, Sun, Heat Transfer and Storage, Solar Heating and Cooling, Photovoltaics, Concentrating Solar Power, Wind Energy, Bioenergy,Geothermal Energy, Water, Storage of Energy, Cost of Energy.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| IE4201 | - | Operations Research I | 3/0/2 | 4 |

Introduction to OR / LP Models and Model Formulation, LP Models and Model Formulation / Graphical Solution Procedure, Graphical Solution Procedure / Simplex Method, Duality, Dual Simplex Method / Sensitivity Analysis, Transportation Problem / Transshipment Problem, Network Models, Integer Programming.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| IE7203 | - | Simulation Modelling | 3/0/2 | 6 |

Introduction. Types of Simulation. Static simulation examples, Advantages and disadvantages of simulation. Steps in simulation. Dynamic simulation examples. Components of discrete event simulation. Collection of statistics. Hand simulation. Simulation of a Single-Server Queuing System. Random Number Generators Used by Simulation Languages. Input distribution fitting. Verification and Validation of Simulation Models. Output Analysis: Comparison and Evaluation of Alternative System Designs. Variance Reduction Techniques, Agent-based Simulation. How to use Agents for Complex Systems Evaluation. Agent-based Modeling: Introduction to Programming Agents, Principles of Multi-agents and Agent Populations.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| IE0411 | - | Simulation Modelling | 3/0/0 | 6 |

Logistics Information Systems in Our Global Companies, Logistics Information Technology Infrastructure, Developing Systems in Logistics Information Technology, Stock Management, Transport and Warehouse Management Logistics Information Systems, Logistics Information Systems Integration in Stock Management, Transport and Warehouse Management, Logistics Information Systems Security, Digital Markets and Products,Supply chain management, Enterprise Resource Planning, Enterprise Resource Planning Package Programs and Advanced Planning and Sequencing, Directing Global Systems

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MCB1003 | - | Calculus III | 4/0/0 | 7 |

Introduction to OR / LP Models and Model Formulation, LP Models and Model Formulation / Graphical Solution Procedure, Graphical Solution Procedure / Simplex Method, Duality, Dual Simplex Method / Sensitivity Analysis, Transportation Problem / Transshipment Problem, Network Models, Integer Programming.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MCB1005 | - | Differential Equations | 4/0/0 | 6 |

Solutions of Some Differential Equations; Classification of Differential Equations. Linear Equations; Method of Integrating Factors; Separable Equations; with Constant Coefficients; Solutions of Linear Homogeneous Equations; the Wronskian. Complex Roots of the Characteristic Equation; Repeated Roots; Reduction of Order. Nonhomogeneous Equations; Method of Undetermined Coefficients; Variation of Parameters. General Theory of nth Order Linear Equations; Homogeneous Equations with Constant Coefficients. The Method of Undetermined Coefficients; The Method of Variation of Parameters. Series Solutions Near an Ordinary Point; Euler Equations; Regular Singular Points. Series Solutions Near a Regular Singular Point. Definition of the Laplace Transform; Solution of Initial Value Problems; Step Functions. Impulse Functions; The Convolution Integral. Linear Equations; Homogeneous Linear Systems with Constant Coefficients; Complex Eigenvalues. Fundamental Matrices

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CEU0001 | - | Earthquake Awareness | 2/0/0 | 2 |

Disaster management, disaster mitigation, introduction to conscious of protection from earthquake, conscious of protection from earthquake, structural awareness basic education 1 (structural safety 1,2,3,4), methods of reducing non-structural hazard, natural disaster hazard mitigation safe conduct studies and principles, culture protection basic education (overview), first aid information, first aid basic education, civil defence doctrines, civil defence doctrines, other natural disaster (flood, landsilide, avalanche, forest fires).

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| HUKU0001 | - | Labour Law | 2/0/0 | 2 |

Concepts and sources of labor law, Basis concepts: worker, employer, establishment (work place) and employer's representative, the principal employer- subcontractor employer relationship, The principle of equal treatment, The transfer of the establishment or one of its sections, Temporary employment relationship, The concept of employment contract, The types of employment contract, employment contract for a definite term and for an undefinite term, parttime and fulltime employment contract, Concepts of job security, Notice of termination, Justification of termination with a valid reason, the termination of the employer of an indefinite period employment contract for not valid reason. Reinstatement of the worker in his work, Right to immediate termination,Collective dismissal, Wages and its remuneration, minimum wage and overtime wage, Organization of work, Occupational health and safety.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| IÇMU0001 | - | Plastic Arts I | 2/0/0 | 2 |

Introduction to the course, Model drawing, lineweight and hatching technique is introduced. Practice on color drawing or lecture on 'plan'. Gestalt theory is introduced. Studio work on Gestalt theory, Three dimensional objects are drawn in relation to analytical approach. Color scheme is introduced. Lecture on plastic art. Site visit to an exhibition. Term project is explained. Discussion on the term Project and 20th century art movements.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| YDF2001 | 2 | French II | 3/0/0 | 3 |

Second and third present tense conjugations. Effects of accord on participial verbs caused by personal pronouns in simple past tense use. Time and place adverbs, indefinite pronouns. Story tense, signal adjectives, possessive pronouns and signal pronouns. Indirect speech structure, conditional mood- conditional present. Conditional sentences. Possessive pronouns, signal pronouns, indefinite pronouns and relative pronouns. Translation exercises.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0449 | | Internet of Things | 2/0/2 | 6 |

Cyber Physical Systems and IoT, Hardware Platforms and Sensors Technology, Network, Routing Technologies, and Performance Issues, Software platforms and services, Intelligent data processing, Semantic technologies and connecting things to the web, System models, applications, physical cyber-social systems, IoT applications, IoT Security, Analytics and applications , IoT standards, Project presentations

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| CSE0449 | | Internet of Things | 2/0/2 | 6 |

Cyber Physical Systems and IoT, Hardware Platforms and Sensors Technology, Network, Routing Technologies, and Performance Issues, Software platforms and services, Intelligent data processing, Semantic technologies and connecting things to the web, System models, applications, physical cyber-social systems, IoT applications, IoT Security, Analytics and applications , IoT standards, Project presentations

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| IÇMU0002 | - | **Plastic Arts II** | 2/0/0 | 2 |

Introduction to the course, Model drawing, lineweight and hatching technique is introduced. Practice on color drawing or lecture on 'plan'. Gestalt theory is introduced. Studio work on Gestalt theory, Three dimensional objects are drawn in relation to analytical approach. Color scheme is introduced. Lecture on plastic art. Site visit to an exhibition. Term project is explained. Discussion on the term Project and 20th century art movements.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISLU 0003İŞL | - | **Career Development Planning and Management** | 2/0/0 | 2 |

Introduction and Basic Concepts & Motivation for the course. Career steps and career journey, Expectations of Business; Goal Setting and Personal SWOT Analysis; 'Definition of Success', Entrepreneurship as a Career Choice, Job Application Process and Its Steps, Job Application Process: Resume Writing, Psychometric Tests and Knowledge Tests, Network, mentors, role models (project start), Job Application Process: Interview Techniques, Practice of Interviewing Techniques, negotiating and job offers, Communication and Human Relations; social media; workplace 'policies'; multinational studies; Business ethics, Body language and creating of image, Academic Career, Graduate Education and Lifelong Learning, Time Management; Life and Work Balance, Stress Management.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISLU 0004 | - | **Democracy Culture and Globalization** | 2/0/0 | 2 |

Born of democracy in the Antique Age. Construction of Republic of Rome and its effects on the globe. The kings, the curch and the first parliaments in the Medium Age, Passing contemporary democracies and French Revolution, Construction of German Union, authoritarian democracy and empire constitutional law, Appearance of separation of powers rule, great political reform, The action of American independence , its place in the development of the world democracy, the first democratic constitutional law, Rising of American liberalism and its effect on the globe, The decadence of Ottoman Empire through First World War, raising of anti-democratic regimes in Europe, The political parties in modern democracies as the fundamental tools, election laws, constitutional laws, interactions of parliaments, The dialectic of globalization, increasing common wealth, contradicting social problems, Global capital structures, their characteristics, individual prosperity and social problems, Effects of economic and political globalization on the local economies and democracies, Approach of neoliberal economy to the energy resources and its effects on the earth as an ecosystem, Projections for the future of democracy culture.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISLU 0002 | - | Leadership Education | 2/0/0 | 2 |

Who is a leader and what is a leadership?. Describing leadership, the dark face of leadership. Not managing but leading: A case study from history. Innovative leadership: Is there a general formula of leadership for all? The psychology of leadership: How to make an empathy to himself/herself and to the others. The psychology of leading and leaders. The woman leadership: opportunities and difficulties. The leadership brand. The qualities necessary for superior leadership. The ethics and the leadership. The media and leadership: A case study from the history and from today. The political affairs and the leadership. The importance of leading in the creation of successful teams. A case study on right and wrong leading. The importance of leading in the creation of successful teams.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISLU 0003 | - | Career Planning, Development and Management | 2/0/0 | 2 |

What is career management? Career Planning and Development. Career stages: to know your personal preferences. Career tendencies in the World.What the business world expects from unexperienced graduates? The Professional visitor from business World. How to create a good resume, a coverletter and a thank you letter. How to make an impressive job interview. Interview techniques, research business techniques. How to find out and fill inEuropass resume? How to apply for a job via internet sites some corporations' website research at the internet. Basic concepts of performance management. Time management. Professional ethics: What is wrongdoing? How to avoid whistleblowing? Interpreting and written communication. The relationship management.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISLU0005 | - | Entrepreneurship | 2/2/0 | 2 |

Introduction, course information. Entrepreneurship in Turkey, Development of Entrepreneurship, Fundamentals of Entrepreneurship, Process, Functions of the entrepreneur. Creativity: Factors Affecting Creativity, Motivation, Attitudes and Behaviors, Environment, Opinion. Intellectual Property, Patent, Trademark, Copyright. Business Plan: Preparation of Marketing Plan, Preparation of Production Plan, Preparation of Management Plan, Preparation of Finance Plan, Writing the Business Plan. Project presentations.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISNU0001 | - | Communication Language | 2/0/0 | 2 |

Introduction to the course. Describing communication and mass communication concepts. Specifying the communication types. Examining the position of mass communication within communication types. Introducing the differences of mass communication from other communication types. Examining the development of mass communication in historical process. Discussing the relationship between mass media mediums and new technology. Classification of communication. The aims of communication The basic characteristics of communication. Examining the communication concept according to different views and changing social conditions, technological facilities. Classification of messages in application samples according to characteristics of messages. Examining the changing position of mass media mediums in social life as a result of developing communication technologies.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISNU0002 | - | Communication Text Analysis I | 2/0/0 | 2 |

Writing techniques. Examining academic writings and writing academic texts. Essay types, Writing essay, Examining articles, Writing articles, Assesment.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISNU0003 | - | Communication Text Analysis II | 2/0/0 | 2 |

Academical writing techniques. Analyzing and writing advanced level academic articles. Research articles,Writing letters. Letter types. Presentation Tehniques. Writing articles. Assesment.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISNU0004 | - | Life Culture | 2/0/0 | 2 |

Attire men-women, Home decoration, styles of furniture, color coordination, Receptions, types of receptions, Table settings and manners, Social conducts and protocol codes on lectured subjects, Official Ceremonies, Meeting, receiving, farewell ceremonies, procession and mo engagements, weddings, divorce, death and funerals), General review, Assesment.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| YDD1001 | - | German I | 3/0/0 | 3 |

International words, to welcome, to present yourself, the Alphabet, W-Questions, Conjugation, Conversation in a cafe, Question sentences, verbs in present tense, singular and plural the verb 'to be', Communication in the course, to ask about the objects in the classroom, nouns, article, negation, Cities, countries and languages, to talk about own and other countries, to understand a graphic, past tense of the verb 'to be', Improvement of the text , Cities, countries and languages, to talk about own and other countries, to understand a graphic, past tense of the verb 'to be', Cities, countries and languages, to talk about own and other countries, to understand a graphic, past tense of the verb 'to be', Cities, countries and languages, to talk about own and other countries, to un last year to make them sure about the event, to discuss about the project-works, to make a list, To repeat the chapters with the station work, to work with a map about Germany, Worksheets about the past tense of the verb to be.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| *YDF1001* | | *French II* | *3/0/0* | *3* |

Order of French phonetics- alphabet, introduction of Articles, structures of word subordinates, foundation rules and "article" systems, verb groups and the first group of inflection of verbs explanations. Introducing of noun states and related article and preposition foundation, conversation studies, point adjectives. Sentences types, the days of the week, parts of the house, seasons and months. Introduction of the undocumented adjectives, first group verbs. French-Turkish, Turkish-French translation studies. Processing time and clock concept, vocabulary lists based on animals and nature, concept of route and directions. Personal pronouns, second auxiliary verbs. Simple past tense, "participle passé accord".

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISNU0005 | - | **Global and National Media Formation** | 2/0/0 | 2 |

Explaining the media philosophy and emphasizing the history of newspaper, radio, TV and internet. The development stages of Turkish Media in media history and analyzing the education system. The development stages of Turkish Media in media history and analyzing the education system. Analyzing the mass media mediums importance. Developing media content and providing student the opportunity to make a practice in order to make him/her understand the subject. Analyzing the effects of media news on public opinion in terms of quantity and quality. Analyzing the differences between intellectual programs, documentary programs, entertainment programs and their practice ways. Comparing national media and global media. Analyzing the differences between intellectual programs, documentary programs, entertainment programs and their practice ways. Comparing national media and global media. Providing knowledge about technique and providing general knowledge about light, decoration behind scenes and in front of the camera.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ISNU0006 | - | **Global Problems and Solutions of Turkish Media** | 2/0/0 | 2 |

Explaining the media philosophy and emphasizing the history of newspaper, radio, TV and internet. The development stages of Turkish Media in media history and analyzing the education system. Developing media content and providing student the opportunity to make a practice in order to make him/her understand the subject. The differences of programs and texts in written press and visual press and the services of visual and non-visua l media. Analyzing the differences between intellectual programs, documentary programs, entertainment programs and their practice ways. Comparing national media and global media. Providing knowledge about technique and providing general knowledge about light, decoration behind scenes and in front of the camera. Practices of the students who have scenario courses. Practicing the knowledge obtained in this course. News for written media, interviews, photography, using camera, news, dialogue.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ITMU0001 | - | **Ceramic** | 1/2/0 | 2 |

Introductory class: how the semester will proceed and what teaching methods will be used. Introduction to basic freehand shaping methods. Practical work and lecture on palm shaping methods. More practical work on palm shaping methods. Beginning of practical work on production methods of composite covers. Demonstration of practical methods of shaping on a turning machine (cylindrical, open and closed mouth, sphere). Creating new forms by uniting the principles methods. Guest Lecturer: discussion and practical work on a turning machine with a ceramics artist. Demonstration of practical methods of shaping on a turning machine. Methods of decorations through cutting and adding pieces. Modular Screen Design. Preparation to boil all works. Boiling and coloring of all works.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ITMU0002 | - | **Ceramic Surface Design** | 1/2/0 | 2 |

Introduction Class. Freehand shaping methods. Shapin with plaque: Wallboard; one piece, two piece and modular. More work on in shaping. Discussion and practical work in chosen spaces and sketches. Freehand shaping methods Shapin with plaque: How to use mould in shape designs. Subject: illumination elements. How to use mould in shape designs. Decoration Techniques: hemstitch method and practical work on form, Decoration Techniques: practical work on bas-relief method. Form design for the raku workshop. Raku Workshop. Preparation of the boiling and coloring of all works.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ITMU0003 | - | **Ceramic Practices in Architecture I** | 2/0/0 | 2 |

Introduction class: weekly class schedule presented to students. Class on the uses of ceramic in interior space designs. Class on billboards. Ne suggestions and discussion on research examples done. Class on designs of lighting of ceramic elements. New suggestions and discussion on research examples done. Class on wall tile designs with wall and floor tiles. Excursion to Eczacıbaşı Vitra Art Workshop. Evaluation of excursion. Decision on which research method will be used for the chosen topic. Assignment Preparations: Discussion. Presentations of assignments.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| ITMU0008 | - | Modern Art | 2/0/0 | 2 |

Programme, purposes, key terms and concepts. Basic theoretical framework of the domain of form. Impressionism, and, important styles and currents  their evolution from Art Nouveau to Cubism. Concepts of Design. Definitions & development of basic ideas. Origins of Modern Sculpture and Futurism, Constructivism, & De Stijl. Modern Architecture and Bauhaus. Modernism and birth of Design. Dada, Surrealism& Beginnings of Pop Art. valuation and A Critical Analysis of Design. Structural approaches and practical research. Project.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MBU0001 | - | Philosophy of Science I | 2/0/0 | 2 |

Early Greek Philosophy on the Essence of Nature (Physis),  The Apology of Socrates and his Wisdom expressed as knowing that he knows nothing. Socrates and the Sophists on the criterion of knowledge. The interconnections between the conventional rules of  language  thinking  and  logic.  The phenomena of life operational in learning the rules of language The connection between the conventional rules of language and logic. The paradigms of  contemporary philosophy of science. Criticism of Cartesian theory of knowledge and logic in the light of contemporary elucidations of the interconnections between rules of language, thinking and representations of language. Criticism of ideological thinking in the light of clarifications of the historical paradigms and rules of thinking in the context of language-phenomena.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MBU0002 | - | Philosophy of Science II | 2/0/0 | 2 |

Same as MBU0001 Philosophy of Science

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MIMU0001 | - | Adventure of Form I | 2/0/0 | 2 |

Introduction, Prehistoric period of Anatolian Civilizations, Sumerian and Egyptian Civilization, Greek Civilization, Roman Empire period, The collapse of the Roman Empire, the beginning of Christianity and Byzantine, Medieval: Romanesque, Norman and Gothic styles, Medieval period, The Renaissance period, Masters of the Renaissance and the Renaissance in northern countries,  Mannerism and Baroque Periods,  After the Baroque period and  the Industrial Revolution and the art of living with the effects of the French Revolution. Romanticism, Neoclassicism, Naturalism.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MIMU0003 | - | Modeling | 2/0/0 | 2 |

Prime and compound forms. Combining positive and negative forms. Composition. Interpretation of a physical model. Deformation. Relief. Pattern.Composition of three different forms. Void and solid works. Free style work on a given subject. Mixed media. Continuing previous works

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| MIMU0004 | - | Adventure of Form II | 2/0/0 | 2 |

Breaking point: 18th century The importance of Industrial revolution and French Revolution in history of world. Neoclassicism, Romanticism, Realism. Glamorous 19th century: The search for a new style in architecture and plastic arts. Right into modern times: New solutions in Europe and America: the Bauhaus and Frank Lloyd Wright's organic architecture. 19th century in the perspective of Turkey: Industry and the National aim towards. Trip: İstanbul State Art and Sculpture Museum  Expressionism and after: Russian Constructivists and Malevich: Zero Configuration. Abstract art: Kandinsky and art without object. Between the two World Wars: Cubism, Dada and Surrealism. The post-war art in Europe. On what is "modern" and what it is not? Post- Modernism, or Neomodernism? Turkish Art in efforts to adapt to the modern world. Trip.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| PHU0005 | - | The Universe | 2/0/0 | 2 |

Our place in the universe, The celestial sphere, The science of astronomy, Motion, energy, and gravity, Cosmic messenger: light, systems, The Sun and the Solar System, Exploring the Stars, Lives of stars, Stellar death, Our Galaxy, Galaxies and beyond, Big Bang and the evolution of the Universe, Life in the Universe.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| PSKU0001 | - | Society and Gender | 2/0/0 | 2 |

Gender Psychology; General Concepts and Principles, Women in Management, different cultures, education, family, law, Literature, Communication, Movie Presentation, Women's oppression, Different Religious Views to Women, Women in Science, Disabled Result and Discussion.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| SYİU0001 | - | Fine Arts I | 2/0/0 | 2 |

Introduction. Introducing basic concepts and terms of arts, Fundamental components of work of arts. Subject and theme Introducing components of style: forms, colour, Visiting museums/galleries, Introducing components of style: Composition, Introducing materials and techniques: Art, sculpture & architecture, Methods of research and presentation, Analysing a work of art.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| SYİU0002 | - | Fine Arts II | 2/0/0 | 2 |

Introduction to the Course and Resources, The concept of time in arts, The setting in arts, Arts and Natural Environment, Arts and Plastic arts and literature, Documentary, Plastic Arts and Music, Plastic Arts and Photography, Visiting museums and exhibitions.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| TDEU0001 | - | Istanbul | 2/0/0 | 2 |

Lecture on the History of Istanbul. The Values of the Civilizations who lived in Istanbul. Evaluation of the artistic and architectural context. Evaluation of the artistic and architectural works in the context of history of arts. Presenting the artistic and architectural visual aids. The Importance of Istanbul in terms of literary surroundings and events. The Image of Istanbul in the Literary Works. Introducing prominent authors and poets of Istanbul. Istanbul in the Classical Literature, Istanbul in the Folk Literature, Istanbul in the New Turkish Literature.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| YDD0001 | - | German I | 3/0/0 | 3 |

Evolution of the Final, Directions, evaluate a diagram, W-question, declarative sentence and question sentence, to plan the event 'Day of German Students'. Residential environments, word fields: Area and furniture, apartment forms describe a dwelling Possessivartikel in the nominativ, Housing sketch, article in the accusative, adjectives in the sentence, Article in the accusative, adjectives in the sentence, Dates and appointments, time, time of day, interrogative sentences with when? From when? Until when? Separable verbs, evolution of the projects, Confirmation of report, meeting offers, physician sign, to apologize for a delay, past tense of to have, The way to the work, to tell, where people work and live, to tell, how people come to the work, ask City plan, floor plan, appointment calendar, orientation in a house, to ask for a way/after a person: Prepositions in, beside, under, up, forwards,behind, on, between, and with+ dative, Prepositions in, beside, under, up, forwards, behind, on, between, and with+ dative, 'the event'

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| YDD0002 | - | **German II** | 3/0/0 | 3 |

Evolution of the Final, Directions, evaluate a diagram, W-question, declarative sentence and question sentence, to plan the event 'Day of German Students'. Residential environments, word fields: Area and furniture, apartment forms describe a dwelling Possessivartikel in the nominativ, Housing day, interrogative sentences with when? From when? Until when? Separable verbs, evolution of the projects, Confirmation of report, meeting offers,sketch, article in the accusative, adjectives in the sentence, Article in the accusative, adjectives in the sentence, Dates and appointments, time, time of physician sign, to apologize for a delay, past tense of to have, ask City plan, floor plan, appointment calendar, orientation in a house, to ask for a way/after a person: Prepositions in, beside, under, up, forwards, behind, on, between, and with+ dative ask City plan, floor plan, appointment calendar, orientation in a person: Prepositions in, beside, under, up, forwards, behind, on, between, and with+ dative ask City plan, floor plan, appointment calendar, orientation in a house, to ask for a way/after a person: Prepositions in, beside, under, up, forwards, behind, on, between, and with+ dative ask City plan, floor plan, appointment calendar, orientation in a house, to ask for a way/after a person.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| YDF0001 | - | **French I** | 3/0/0 | 3 |

Introduction of the order of French phonetics- alphabet, sound unison, the phonetic structure of the simple words and the examples of the alphabetical readings. "Article" subject. Simple "sentence reading tryouts". Structures of word subordinates, foundation rules and "article" systems that are used in relation to this subject with examples. "Avoir" and "etre" auxiliary verbs, a general look to the verb groups and the first group of inflection of verbs explanations. Nationality and country names. Noun states and related article and preposition foundation studies. Conversation studies. Daily use, self-explaining question-answer structures will be given. Learning and practicing point adjectives. Conjugation of "Pouvoir-Devoir" auxiliary verbs, simple sentences with these verbs and question- answer studies. List of qualification adjectives.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| YDF0002 | - | **French II** | 3/0/0 | 3 |

Second and third present tense conjugations. Effects of accord on participial verbs caused by personal pronouns in simple past tense use, explanations on all verbs' "simple future tense" conjugation. Time and place adverbs, indefinite pronouns, using them in a sentence, examples of how to use time and place adverbs in future and past tense sentences. Signal adjectives revision, explanation possessive pronouns and signal pronouns. Practices on signal adjectives and pronouns, time and place adverbs and possessive pronouns. Indirect speech, techniques on making a sentence in indirect speech structure. Showing inflection and formation of conditional mood-conditional present. Conditional mood making Indirect sentences exercise.

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| YDI3001 | - | **English III** | 3/0/0 | 3 |

Verb ''to be'' and auxiliary verbs. Question structures with ''How'' and ''What'', The Simple Past Tense (positive-negative and question forms), The Simple Past Tense (positive-negative and question forms), Used to, Past Continuous Tense and story writing, Countable and uncountable nouns, Adjectives and quantifiers, The Present Simple Tense, Present Simple vs Past simple, Comparative and Superlative form of adjectives

| Course Code | Semester | Course Name | LE/RC/LA | ECTS |
|---|---|---|---|---|
| YDI4001 | - | **English IV** | 3/0/0 | 3 |

Present Perfect, Simple, Perfect Simple with already, yet, Predictions (might may..), Passive voice, Modals of Obligation (present time, past time), Prepositions of Movement, Relative Clauses.