

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY



**KTO KARATAY
ÜNİVERSİTESİ**

KTO KARATAY UNIVERSITY FACULTY OF ENGINEERING

ERASMUS+ Course Catalogue

for the academic year 2019/2020 Spring Semester

KONYA, 2019-2020

(ALPHABETICAL) LIST OF COURSES WITH CODES

1. BIM-222 Algorithms and Programming
2. CE-323 Analysis of Algorithms
3. CE-411 Computer Graphics
4. CE-332 Computer Networks
5. CE-224 Data Structures
6. CE-341 Database Management Systems
7. CE-417 Digital Image Processing
8. BIM-224 Discrete Computational Structures
9. CE 322 Distributed Systems
10. BIM-124 Introduction to Algorithms and Computer Programming
11. CE-455 Machine Learning
12. CE-480 Mobile Programming
13. CE-222 Programming Languages
14. CE-438 Programming with Python
15. CE-461 Software Engineering

Algorithms and Programming-BIM222

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3+2	ECTS TYPE: 7
SEMESTER: Spring	CLASS LEVEL: 1
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: -	
CONTENTS: Iterative and recursive programming techniques. Functions and parameter passing. Pointers and dynamic storage allocation. Multidimensional arrays. Record structures. File systems and file processing. Documentation and testing. Introduction to object oriented programming.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Midterm, Homework, Lab., Final	
ASSESSMENT METHODS: Class, Lab.	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Sekip Engin MENDI, engin.mendi@karatay.edu.tr	

Analysis of Algorithms-CE323

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 6
SEMESTER: Fall	CLASS LEVEL: 3
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS:	
CONTENTS: Selected computer algorithms: Sorting, searching, string processing and graph algorithms. Algorithm design and analysis techniques. Time and computational complexities of algorithms. Introduction to computability, parallelisation of algorithms, linear and dynamic programming.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class	
ASSESSMENT METHODS: Midterm, Short Exam, Practice, Project, Final, Homework	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Semih YUMUŞAK, semih.yumusak@karatay.edu.tr	

Computer Graphics-CE411

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 5
SEMESTER: Fall	CLASS LEVEL: 4
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: -	
CONTENTS: Basic raster graphics algorithms for drawing 2d and 3d primitives, scan converting shapes, filling shapes, clipping, generating characters, geometrical transformations, viewing in 3D, projections, geometric modeling, input and interaction techniques, illumination and shading, ray tracing, texture mapping.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Lab.	
ASSESSMENT METHODS: Midterm, Final, Homework	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Dr. Ş. Engin MENDİ, engin.mendi@karatay.edu.tr	

Computer Networks – CE332

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 6
SEMESTER: Spring	CLASS LEVEL: 3
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS:	
<p>CONTENTS: An overview of OSI and TCP/IP models and Internet architecture. Packet switching and circuit switching network technologies. Delay, loss and throughput in packet-switched networks. Analyzing network packets using a network analyzer program and network designs in a network modeling and simulation environment. Application Layer: Introduction to socket programming, application layer protocols: DNS, HTTP, FTP, SMTP, POP3, and peer-to-peer networking. Transport Layer: Principles of reliable data transfer, TCP and UDP protocols, flow control and congestion control. Network Layer: IP protocol and addressing. Routing Algorithms: Link State, Distance Vector, Hierarchical Routing, Routing in the Internet: RIP, OSPF, BGP protocols. Broadcast and multicast routing. Introduction to data link protocols, and local area networks: Ethernet and IEEE 802.11 protocols</p>	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class	
ASSESSMENT METHODS: Midterm, Short Exam, Final, Lab.	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Semih YUMUŞAK, semih.yumusak@karatay.edu.tr	

Data Structures-CE224

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 2+2	ECTS TYPE: 5
SEMESTER: Spring	CLASS LEVEL: 2
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS:	
CONTENTS: Classification of data structures, memory and time considerations. Linked lists, stacks and queues, tree structures, graphs. Study of the basic data structures and their implementations. Recursive applications.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class, Lab.	
ASSESSMENT METHODS: Midterm, Final, Homework, Lab.	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Ali OZTURK, ali.ozturk@karatay.edu.tr	

Digital Image Processing-CE417

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 5
SEMESTER: Fall	CLASS LEVEL: 4
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: -	
CONTENTS: Representation, compression, storage, retrieval of data from different media such as images, text, video and audio. Multimedia file formats, multimedia programming APIs, multimedia applications.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Lab.	
ASSESSMENT METHODS: Midterm, Final, Homework	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Dr. Ş. Engin MENDİ, engin.mendi@karatay.edu.tr	

Database Management Systems -CE341

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3+2	ECTS TYPE: 5
SEMESTER: Fall	CLASS LEVEL: 3
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: -	
CONTENTS: Logical organization of data, problem definition, entity and relationship concepts, attributes, entity-relationship (ER) modeling of data, obtaining ER diagrams from problem definition statements, translating ER diagrams to SQL tables, relational algebra, union, division, intersection, filtering operations, data description and query languages, basic SQL data manipulation and data definition commands, single table and multi-table queries, division.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class	
ASSESSMENT METHODS: Midterm, Final, Lab., Short Exam	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Ali ÖZTÜRK, ali.ozturk@karatay.edu.tr	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Discrete Computational Structures-BIM 224

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 6
SEMESTER: Spring	CLASS LEVEL: 1
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS:	
CONTENTS: Propositional logic and proofs. Set theory. Relations and functions. Algebraic structures. Groups and semi-groups. Lattice structures and Boolean algebra. Graph theory. Algorithms and turing machines.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class	
ASSESSMENT METHODS: Midterm, Final, Short Exam, Homework	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Dr. Ş. Engin MENDİ, engin.mendi@karatay.edu.tr	

Distributed Systems-CE322

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 5
SEMESTER: Spring	CLASS LEVEL: 4
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS:	
CONTENTS: Overview of Operating Systems, Process Synchronization and Deadlocks, Threads and Thread Synchronization, Synchronization In Distributed Systems, Management of Time: Logical Clocks, Vector Clocks, Global States, Termination Detection, Distributed Mutual Exclusion: Central Algorithms, Lamport's Distributed Algorithm, Token Based and Heuristic Algorithms, Distributed Deadlock Detection: Centralized and Distributed Algorithms, Election Algorithms, Agreement Protocols : Byzantine Agreement, Dynamic Scheduling in Distributed Systems, Static Scheduling in Distributed Systems, Distributed File Systems, Fault Tolerance in Distributed Systems, Distributed Real-Time Systems	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class	
ASSESSMENT METHODS: Midterm, Short Exam, Homework, Final	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Dr. Semih YUMUŞAK, semih.yumusak@karatay.edu.tr	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Introduction to Algorithms and Computer Programming-BIM124

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 6
SEMESTER: Fall	CLASS LEVEL: 1
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: -	
CONTENTS: Basic Computer Hardware, Problem solving using computers. The concept and notation of algorithms. Problem analysis and algorithm design. Development of algorithms and their implementation in a procedure-oriented language. Topics include; Integrated programming environment (editing, computing, debugging), data types, operators, input/output, structured programming, program control, subprograms, passing parameters. Arrays and array processing.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class, Lab.	
ASSESSMENT METHODS: Midterm, Final, Homework, Lab.	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Şekip Engin MENDİ, engin.mendi@karatay.edu.tr	

Machine Learning-CE455

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 5
SEMESTER: Spring	CLASS LEVEL: 3
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS:	
<p>CONTENTS: Machine learning techniques and statistical pattern recognition, supervised learning (generative/discriminative learning, parametric/non-parametric learning, neural networks, support vector machines); unsupervised learning (clustering, dimensionality reduction, kernel methods); learning theory (bias/variance tradeoffs; VC theory; large margins); reinforcement learning and adaptive control, applications areas (robotic control, data mining, autonomous navigation, bioinformatics, speech recognition, and text and web data processing).</p>	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class	
ASSESSMENT METHODS: Midterm, Final, Homework	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Ali ÖZTÜRK, ali.ozturk@karatay.edu.tr	

Mobile Programming-CE480

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 5
SEMESTER: Fall	CLASS LEVEL: 2
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: -	
CONTENTS: Learning to how to program Mobile Applications	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class	
ASSESSMENT METHODS: Midterm, Homework, Final	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Dr. Ali ÖZTÜRK, ali.ozturk@karatay.edu.tr	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Programming Languages-CE222

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 2+2	ECTS TYPE: 5
SEMESTER: Spring	CLASS LEVEL: 2
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS:	
CONTENTS: Syntax and semantics of programming languages, grammars, design of programming languages, data types, variables, statements, procedures, recursion, parameter passing, dynamic and static memory management. Functional, logic, and object-oriented programming paradigms. Examples from typical and modern programming languages.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class, Lab.	
ASSESSMENT METHODS: Midterm, Lab., Short Exam, Final	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Dr. Semih YUMUŞAK, semih.yumusak@karatay.edu.tr	

Programming with Python-CE438

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE: 5
SEMESTER: Fall	CLASS LEVEL: 2
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS:	
CONTENTS: Basic programming steps of python, structural elements of python, libraries of python, programming tools that helps specific computer science needs like machine learning are constitute the python class.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class	
ASSESSMENT METHODS: Midterm, Final, Homework	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Dr. Semih YUMUŞAK, semih.yumusak@karatay.edu.tr	

FACULTY OF ENGINEERING – KTO KARATAY UNIVERSITY

Software Engineering-CE461

FACULTY: Faculty of Engineering	CLASS TYPE: Undergraduate
NUMBER OF HOURS: 3	ECTS TYPE:
SEMESTER: Fall	CLASS LEVEL: 4
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS:	
CONTENTS: An overview of software engineering, software life cycle, and methodologies, modeling with UML and design patterns, project management and software development team organization, requirements elicitation and analysis, system design, object design, software testing. The realization of software engineering concepts is realized on a nontrivial team design project in which a group of students implement a system from its specification and design using a UML modeling and implementation tool.	
EFFECTS OF EDUCATION PROCESS:	
LITERATURE (OPTIONAL):	
TEACHING METHODS: Class	
ASSESSMENT METHODS: Midterm, Final	
LECTURER (NAME, EMAIL CONTACT): Asst. Prof. Dr. Ali ÖZTÜRK, ali.ozturk@karatay.edu.tr	