VOCATIONAL SCHOOL OF INFORMATION TECHNOLOGIES

Director   : Dr. Lecturer Şener AĞALAR
Deputy Director   :
Secretary to the school :

STAFF

DEPARTMENT OF COMPUTER TECHNOLOGIES

CLOUD COMPUTING OPERATOR PR.

PROGRAM

I.Semester

Code	Course	Hrs	ECTS
BBO101	Introduction to Cloud Computing Technologies	3+1	5.0
BBO103	Operating Systems and Security	3+2	5.0
BBO105	Information Technologies	2+1	3.0
BTM101	Programming I	3+2	5.0
İNG187 (Eng)	English I	3+0	3.0
TÜR125	Turkish Language I	2+0	2.0
	Mesleki Seçmeli Dersler	--	2.0
	Yabancı Dil Dersleri	--	3.0

		28.0	

II.Semester

Code	Course	Hrs	ECTS
BBO102	Virtualization and Cloud Technologies	3+2	5.0
BBO104	High Performance Computing Hardwares	3+2	6.0
BTM102	Programming II	3+2	5.0
İNG188 (Eng)	English II	3+0	3.0
TÜR126	Turkish Language II	2+0	2.0
	Seçmeli Dersler	--	4.0
	Yabancı Dil Dersleri	--	3.0

		28.0	

III.Semester

Course	Hrs	ECTS
Mesleki Seçmeli Dersler	-	9.0
	-	

	9.0	

IV.Semester

Course	Hrs	ECTS
Mesleki Seçmeli Dersler	-	12.0
	-	
Seçmeli Dersler	-	4.0
	-	

	16.0	

Area Elective Courses

Code	Course	Hrs	ECTS
ESTÜ112	Cyber Security for Everyone	2+0	2.0
İSG401	Occupational Health and Safety I	2+0	2.0
İSG402	Occupational Health and Safety II	2+0	2.0
İŞL475	Techno-Entrepreneurship	3+0	4.0

ELECTRICAL AND AUTOMATION DEPARTMENT

ROBOTICS AND ARTIFICIAL INTELLIGENCE PROGRAM

PROGRAM

	I.Semester				**II.Semester**		
BTM101	Programming I	3+2	5.0	BTM102	Programming II	3+2	5.0
İNG187 (Eng)	English I	3+0	3.0	İNG188 (Eng)	English II	3+0	3.0
RYZ101	Computer Aided Technical Drawing	2+1	3.0	RYZ102	Introduction to Autonomous Systems	2+1	3.0
RYZ103	Data Structures and Algorithms	3+2	5.0	RYZ104	Robotics and Embedded Systems	2+3	6.0
RYZ105	Operating Systems	2+3	5.0	RYZ106	Artificial Intelligence	3+0	4.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	RYZ108	Machine Learning	2+2	5.0
TÜR125	Turkish Language I	2+0	2.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
	Yabancı Dil Dersleri	--	3.0	TÜR126	Turkish Language II	2+0	2.0
					Yabancı Dil Dersleri	--	3.0
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			28.0				33.0

	III.Semester				**IV.Semester**		
	Mesleki Seçmeli Dersler	-	12.0		*Mesleki Seçmeli Dersler*	-	11.0
		-				-	
	Seçmeli Dersler	-	4.0		*Seçmeli Dersler*	-	3.0
		-				-	
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			16.0				14.0

DEPARTMENT OF AUDIOVISUAL TECHNOLOGIES AND MEDIA PRODUCTION

GAME DEVELOPMENT AND PROGRAMMING PROGRAM

PROGRAM

	I.Semester				**II.Semester**		
BTM101	Programming I	3+2	5.0	BTM102	Programming II	3+2	5.0
İNG187 (Eng)	English I	3+0	3.0	İNG188 (Eng)	English II	3+0	3.0
OGP101	Game Physics	3+0	5.0	OGP102	Game Design Principles	2+2	5.0
OGP103	Game Development	2+4	6.0	OGP104	Computer Graphics	2+2	4.0
TAR165	Atatürk's Principles and History of Turkish Revolution I	2+0	2.0	OGP106	2D Game Development Studio	2+4	6.0
TÜR125	Turkish Language I	2+0	2.0	TAR166	Atatürk's Principles and History of Turkish Revolution II	2+0	2.0
	Mesleki Seçmeli Dersler	--	2.0	TÜR126	Turkish Language II	2+0	2.0

Yabancı Dil Dersleri	--	3.0		*Seçmeli Dersler*	--	3.0
				Yabancı Dil Dersleri	--	3.0
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		28.0				33.0

III.Semester			**IV.Semester**		
Mesleki Seçmeli Dersler	-	7.0	*Mesleki Seçmeli Dersler*	-	14.0
	-			-	
Seçmeli Dersler	-	4.0	*Seçmeli Dersler*	-	4.0
	-			-	
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		11.0			18.0

COURSE CONTENTS

BBO101   Introduction to Cloud Computing Technologies   3+1   5.0
Cloud computing fundamentals; Cloud service models; cloud infrastructures; Development of cloud-based applications.

BBO102   Virtualization and Cloud Technologies   3+2   5.0
Virtualization fundamentals; virtualization types; cloud computing models; cloud infrastructures; cloud-based application development and management; cloud-based security and privacy.

BBO103   Operating Systems and Security   3+2   5.0
Operating system concepts; Operating system structures; Security policies and mechanisms in operating systems; Security vulnerabilities; Protection methods from vulnerabilities.

BBO104   High Performance Computing Hardwares   3+2   6.0
High performance computing (HPC) hardware; Parallel processors; Architectures of GPUs, FPGAs, and other special purpose computing units; Performance analysis and optimization techniques.

BBO105   Information Technologies   2+1   3.0
Basic concepts of information technologies; Computer systems; Software applications; Internet and network fundamentals; Data management and security.

BTM101   Programming I   3+2   5.0
Variables and Data Types; Control Structures and Conditional Statements; Comparison Operators; Logical Operators; Loops and List Operations; Functions and Modular Programming; File Operations; Advanced Programming Topics and Library Usage; Error Trapping; Project Development.

BTM102   Programming II   3+2   5.0
Functional Programming; Data Structures and Algorithms; Sorting and Search Algorithms; Object Oriented Programming (OOP); GUI Programming; GUI Application Development; Database Operations; Project Development.

ESTÜ112   Cyber Security for Everyone   2+0   2.0
Basic Concepts: Computer components and definitions; Software: System software, Application software; Computer Networks: Concept of Network and Internet; Malware and Network Attacks: Viruses, Attacks; Computer and Access Security: Password selection, File sharing, Backup; Internet security: SSL, Fake websites; Security on Social Platforms: Fake news and people; Security Analysis: System analysis, Network traffic analysis; System and Network Security: Network security, System security, Mobile device security; Information Security Management System: ISO 27001; Personal Data Protection Law: PDLP procedures; Information Technology Law: Information crimes and punishments.

İNG187 (Eng)   English I   3+0   3.0
Using Personal Pronouns and Possessive Adjectives; Using to be in Present Tense; Using Singular and Plural Nouns; Using Basic Language Related to Food and Drink; Using "There is-there are" in sentences; Using "have got"; Asking "yes-no" Questions and Giving Short Answers to Them; Talking about Daily and Weekly Routines; Talking about Likes and Dislikes; Talking about Sports and Hobbies; Talking about Abilities by Using "can", "can't"; Using Adjectives that Describe People; Talking about Appearance, Personality and Feelings of People; Talking about Clothes and Colours; Talking about Shopping and Prices; Using Present Continuous Tense.

İNG188 (Eng)   English II   3+0   3.0
Using Simple Present Tense; Comparing Simple Present and Present Continuous Tenses; Using Prepositions of Time and Place; Giving Directions, Making Reservations; Using "to be" in Past Tense; Using Regular and Irregular Verbs in Simple Past Tense; Using Comparative and Superlative Form of Adjectives; Using Modals to Give Advice; Suggestions and Obligations; Using Future Tense: Making Sentences Using "going to" and "will"; Using If Clauses Type 0 and 1.

İSG401   Occupational Health and Safety I   2+0   2.0
Overview of Occupational Health and Safety: Scope, Importance, Related concepts; Workplace Accidents and Occupational Diseases: Reasons, Precautions, Costs; Occupational Health and Safety: Responsible institutions, Problems in applications, Legal basis for occupational safety, Legislation, Regulations for employers; Legal Responsibility of Employers for Workplace Accidents and Occupational Diseases: Liability concept, Regulations for employer responsibility.

İSG402   Occupational Health and Safety II   2+0   2.0
Compensation Claims for Occupational Health and Safety: Compensation types; Legislation for Employers not Abide by Occupational Health and Safety Instructions: Administrative sanctions, Criminal sanctions, Investigations for workplace accidents; Organization in Workplace for Occupational Health and Safety: Employee representative, Obligation for constituting board for occupational health and safety, Workplace health and safety board; International Legislation for Occupational Health and Safety: International legislation, European legislation, Comparison of national and international legislation.

İŞL475   Techno-Entrepreneurship   3+0   4.0
Techno-Entrepreneurship: Definitions, Concepts, History; Creativity and Innovation: Concepts, Innovation types, Situation in Turkey and world; Idea to Market: Emergence and commercialization process of business idea, road maps; Entrepreneurial Marketing: Concepts, strategy and implementation; Managerial Issues: Performance, Team work, Strategic orientations; Legal Issues: Patents, Copyrights, Law and regulations; Financial Issues: Sources of funding, Sponsorships; Characteristics of Techno-Entrepreneur: Background, Education, Personality; Sustainability and Innovator's Dilemma: Concepts, Reasons of failure; Future of Techno-Entrepreneurship: Trends.

OGP101   Game Physics   3+0   5.0
Game Engines; Game Engine Usage and Software Development; Game Engine Components; Game Mechanics and Game Physics; Interactive Game Features; Physical Simulations and Real-Time Rendering; Multiplayer Game Physics; In-Game Physics Interactions; Motion Capture and Application; Vehicle and Machinery Physics; Game Testing and Debugging; Virtual Reality and Augmented Reality.

OGP102   Game Design Principles   2+2   5.0
Fundamentals and History of Game Design; Game Physics and Player Interaction; Game Balancing and Progression System; Game Story and Character Design; Creating Game World and Atmosphere; Game Prototyping and Testing; Game Design Project Development.

OGP103   Game Development   2+4   6.0
Game Development Process and Basic Concepts; Game Development Tools and Platforms; Game Physics and Balancing; Game Prototyping and Design; Game Graphics and Sound Design; Team Collaboration and Project Management; Game Testing and Publishing Process.

OGP104   Computer Graphics   2+2   4.0
Storytelling Fundamentals and Structure; Game Characters and Dialogues; Ripple Points and Story Paths; Creating Game World and Atmosphere; Effect of Player Decisions on Story Flow; Dynamic Story Creation and Balancing; Interactive Story Design Applications.

OGP106   2D Game Development Studio   2+4   6.0
2D Game Engines and Tools; 2D Graphic Design and Animation; Game Physics and Level Design; Character Design and Sprite Animations; Game Prototyping and Testing; 2D Game Design Project Development; 2D Game Development Practices.

RYZ101   Computer Aided Technical Drawing   2+1   3.0
Introduction to Technical Drawing and general information about CAD; Three-view extraction and three-view drawing with CAD; Scales and dimensioning principles; CAD dimensioning commands and applications; Creation of solid models, construction drawings, assembly models of parts that constitute autonomous systems in the software environment; Application of mechanism simulation creation techniques.

RYZ102   **Introduction to Autonomous Systems**   **2+1   3.0**

Basic components of autonomous systems; Modeling; Driving techniques; Sensor technologies; Path planning; Localization; Mapping; Autonomous navigation; Autonomous system modeling; Autonomous simulation applications.

RYZ103   **Data Structures and Algorithms**   **3+2   5.0**

Introduction to data structures; Basic concepts; Arrays; Lists; Queues; Stacks; Tree structures; Graphs; Navigation algorithms; Functioning of data structures and operations; Use of data structures with various algorithms; Project development.

RYZ104   **Robotics and Embedded Systems**   **2+3   6.0**

Robotics and Embedded Systems; Basic electronics; Microcontrollers; Sensors; Actuators; programming; design, development and implementation of robotics and embedded systems.

RYZ105   **Operating Systems**   **2+3   5.0**

Operating Systems; Management of computer systems; Efficient use of resources; Process management; Memory management; File systems; Security and performance analysis; Network management and communications; Artificial Intelligence and Operating systems.

RYZ106   **Artificial Intelligence**   **3+0   4.0**

Definition of artificial intelligence; History; Basic concepts; Techniques; Applications; Machine learning; Algorithms, Deep learning, Image processing, Security threats and vulnerabilities.

RYZ108   **Machine Learning**   **2+2   5.0**

Machine learning; Data preprocessing; supervised learning (including regression and classification); unsupervised learning (clustering and dimensionality reduction); Model evaluation metrics; Algorithms and model selection; Investigating Machine Learning in Industry and Research; Challenges and Ethics; Project Development.

TAR165   **Atatürk's Principles and History of Turkish Revolution I**   **2+0   2.0**

Reform efforts of Ottoman State, General glance to the stagnation period, Reform searching in Turkey, Tanzimat Ferman and its bringing, The Era of Constitutional Monarchy in Turkey, Policy making during the era of first Constitutional Monarchy, Europe and Turkey, 1838-1914, Europe from imperialism to World War I, Turkey from Mudros to Lausanne, Carrying out of Eastern Question, Turkish Grand National Assembly and Political construction 1920-1923, Economic developments from Ottomans to Republic, The Proclamation of New Turkish State, from Lausanne to Republic.

TAR166   **Atatürk's Principles and History of Turkish Revolution II**   **2+0   2.0**

The Restructuring Period; The Emergence of the fundamental policies in the Republic of Turkey (1923-1938 Period); Atatürk's Principles, and Studies on Language, History and Culture in the period of Atatürk; Turkish Foreign Policy and Application Principles in the period of Atatürk; Economic Developments from 1938 to 2002; 1938-2002 Period in Turkish Foreign Policy; Turkey after Atatürk's period; Social, Cultural and Artistic Changes and Developments from 1938 to Present.

TÜR125   **Turkish Language I**   **2+0   2.0**

Language: Characteristics of language, Relationship between language and thought and language and emotion, Theories about the origin of languages, Language types, The position of Turkish Language among world languages; Relationship Between Language and Culture; Historical Progress of the Turkish Language; Alphabets Used for Writing in Turkish; Turkish Language Studies; Turkish Language Reform; Phonetics; Morphology and Syntax; The Interaction of Turkish Language with Other Languages; Wealth of Turkish Language; Problems Facing Turkish Language; Derivation of Terms and Words; Disorders of Oral and Written Expression.

TÜR126   **Turkish Language II**   **2+0   2.0**

Composition: Written composition, Paragraph and ways of expression in paragraphs; Punctuation; Spelling Rules; Types of Written Expression and Practices I: Expository writing; Types of Written Expression and Practices II: Narrative writing; Academic Writing and Types of Correspondence; Reading and Listening: Reading, Reading comprehension strategies, Critical reading; Listening; Relationship between Listening and Reading; Oral Expression: Basic principles of effective speech; Body Language and the Role of Body Language in Oral Expression; Speech Types; Principles and Techniques of Effective Presentation; Some Articulatory Features of Oral Expression.