

Samsun University – Kavak Vocational School

**Architecture and Urban Planning Department** 

**Geographic Information Systems Program Course Contents** 

## I. Semester

Course Code	Course Name	Т	Р	L	ECTS	С	Hours	Туре	
ATI101	Atatürk's Principles and	2	0	0	2	2	2	Compulsory	
	Revolution History-I	2	U	U	2	2	2	Compaisory	
Concepts and (		do	volor	mon	te Indue	trial	Povolutio	n and French	
Concepts and Ottoman modernization. European developments, Industrial Revolution and French									
Revolution. New Ottomans, Constitutional Monarchy and Union and Progress Society. II. Constitutional Monarchy Period, Tripoli and Balkan Wars. Causes of World War I. World War I: Sharing the Ottoman									
	I Struggle preparatory period. Con						last Ottom	ian Parliament	
	Pact. TBMM Period: Formation of 1			eaty c				_	
Course Code	Course Name	<u> </u>	Ρ	L	ECTS	С	Hours	Туре	
CBS101	Introduction to Geographic	4	0	0	6	4	4	Compulsory	
	Information Systems								
Information Syst	em Concept. Geographical Inform	atior	n Sys	stem	Concept	and	Definition.	Geographical	
Information Sys	stem History. Geographical obje	cts	and	GIS	6. Geogra	aphic	al Inform	ation System	
	eographical Information System								
	, Data Models and Spatial Data								
	Coordinat Systems. Urban Inform								
Support Systems		ation	0,0	tonno					
Course Code	Course Name	Т	Р		ECTS	С	Hours	Туре	
CBS103	Information and Communication	1	1	0	3	2	2	Compulsory	
003103				0	3	2	2	Compulsory	
Desurrent Dress	Technologies				llen Dein	. Т.		ations Object	
	essing, Forming Processes. Doc								
	anced Features. Macros, Customiza								
	ions. Data Analysis. Print, Macros,		omiz	ation	<ol> <li>Slide Ob</li> </ol>	ojects	s, Display	Settings. Print,	
	nternet Concepts. Access Databas	e.							
O a suma a O a la					ECTS	<b>^</b>		Туре	
Course Code	Course Name	Т	Ρ	L	ECIS	С	Hours	туре	
Course Code CBS105		<u>т</u> 3	<b>P</b>	<b>L</b>	3	3	Hours 3	Compulsory	
CBS105	Introduction to Database	3	0	0	3	3	3	Compulsory	
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Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре	
YDİ101	Foreign Language-I	2	0	0	2	2	2	Compulsory	
Greetings. Brainstorming about the mutual expectations. Ice breakers. To be. Possessive adjectives. Countries. Describing jobs. Simple present tense. Word order. WH questions. Expressing likes/dislikes. Foods and drinks. Ordering. Speaking about food from all over the World. Writing and speaking about free time activities. Making dialogues using frequency adverbs. Reading passage about basketball and vocabulary practice. Talking and writing about what people are doing. Using present progressive. Understanding the polite rules of talking on the phone and acting. Talking about past events using simple past tense. Was/were. Understand an article about past and present.									
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре	
CBS151	Basic Mathematics for Geographic Information Systems	2	0	0	3	2	2	Elective	
Expressions. E	Basic Concepts. Clusters. Numbers and Functions. Exponential and Power Numbers. Algebraic Expressions. Equations and Non-Equations. I. and II. Order Equations. II. Order Equations and Relationships. Functions. Relationships. Rate and Proportions. Problems Related with Rate and								
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре	
CBS153	Basic Statistics for Geographic Information Systems	2	0	0	3	2	2	Elective	
	Concepts. Measures of Central Ten		•						

Models. Confidence Intervals. Hypothesis Tests. Regression and Correlation. Geostatistical Analysis. Spatial Interpolation Techniques. Spatial Interpolation Techniques Application.

## II. Semester

Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре	
ATİ102	Atatürk's Principles and Revolution History-II	2	0	0	2	2	2	Compulsory	
Political revolutions: Abolition of the Sultanate, Declaration of the Republic, Abolition of the Caliphate. Political parties and political events established in the period of Atatürk and represented in the Turkish Grand National Assembly. Legal reform and legal order. Revolutions in education. Revolutions in culture and social area. Revolutions in economic area. Turkish foreign policy in Atatürk period (1923-1930). Turkish foreign policy in Atatürk period (1930-1938). Principles of Atatürk and complementary principles. After Atatürk's Turkey.									
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре	
CBS102	Introduction Applications to Geographic Information Systems	1	2	0	6	2	3	Compulsory	
GIS, Basic Concepts, Basic Map Information. ArcGIS Technology Overview. Analysis of Geographical Data in ArcMap Environment. Data Display Functions. Symbology, Labeling and Cartographic Production in ArcMap. Questioning and Reporting of Geographical Data. Data Entry in ArcMap. Other Tools for Feature Creation. ArcCatalog Applications. Data Conversion Functions. Geodatabase Functions. ArcToolbox and ModelBuilder.									
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре	
CBS104	Land Management and Geographic Information Systems	3	0	0	4	3	3	Compulsory	
CBS104 Regulations of L urban developn Applications of la GIS desing for la	Land Management and Geographic Information	3 natio essa nent form	0 ns a ry u and urba	0 bout rban GIS. an de	4 urban de developi GIS appli velopmen	3 velop ment catio t plar	3 ment plar planning ns in land nning. App	Compulsory nning. Optional applications. management. lication of land	
CBS104 Regulations of L urban developm Applications of L GIS desing for la consolidation. Do Course Code	Land Management and Geographic Information Systems Jrban development planning. Inforr nent planning applications. Neco and allotment plan. Land managem and management. Applications of re	3 natio essa nent form agen <b>T</b>	0 ns a ry u and urba	0 bout rban GIS. an de	4 urban de developi GIS appli velopmen	3 velop ment catio t plar d ma	3 ment plar planning ns in land nning. App	Compulsory nning. Optional applications. management. lication of land Type	
CBS104 Regulations of L urban developm Applications of L GIS desing for la consolidation. Do Course Code CBS106	Land Management and Geographic Information Systems Jrban development planning. Inforr nent planning applications. Nect and allotment plan. Land managen and management. Applications of re ecision support system in land man	3 natio essa nent form agen <b>T</b> 2	0 Ins a ry u and u urba nent. <b>P</b> 0	0 bout rban GIS. an de Integ <b>L</b>	4 urban de developi GIS appli velopmen grated lan ECTS 4	3 velop ment catio t plar d ma <b>C</b> 2	3 ment plar planning ns in land nning. App nagement <b>Hours</b> 2	Compulsory nning. Optional applications. management. lication of land <b>Type</b> Compulsory	

Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS108	Database Applications	1	1	0	4	2	2	Compulsory		
The Spatial Data Model. The Spatial Database Overview. The Spatial Database and Vector Datas. Spatial										
Database and Raster Datas. The Spatial Database Elements. Topology in The Spatial Database. The										
	Spatial Database Design. The Spatial Database and Version Management.									
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS110	Intership	0	0	0	10	0	0	Compulsory		
	ork place, to learn about the work d							s of workplace		
	ne the business practices, participa			tice a						
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
TDİ102	Turkish Language II	2	0	0	2	2	2	Compulsory		
	juage. The relationship between nat									
	mily of languages, the place of T									
	Turkish language. The current si									
	cular, accent, dialect. Definition of g									
	tic of Turkish, its features and class							lles of Turkish.		
	ord structure of Turkish and particle			ional						
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
YDİ102	Foreign Language II	2	0	0	2	2	2	Compulsory		
	othes. Using comparative adjectives									
	Describing appearances and perse									
	riting activity about describing our									
	mprehending a passage about city									
	here are". Reading a text about favo									
	activities. Using past tense. Readin									
•	are tense. Listening activity about tra	avel	plans	and	follow-up	activ	uties. Rea	ding text about		
travel activities.		_	_					_		
Course Code	Course Name	T	P	L	ECTS	<u>С</u>	Hours	Туре		
CBS152	Creating and Publishing Maps	2	0	0	3	2	2	Elective		
	c planning process. Selecting an									
	ap design. Qualitative and quant									
	Symbolizing elevation. Working wit	n m	ap ia	beis.	Creating	and	editing ar	notation. Map		
	nent design. Map output.	-			FOTO	•		<b>T</b>		
Course Code	Course Name	T	P	L	ECTS	C	Hours	Туре		
CBS154	Techniques of Location Finding	2	0	0	3	2	2	Elective		
	niques. GNSS working principle and									
	rements. GNSS recievers. GNSS									
	pplications for navigation. GNSS a									
	in the World and Turkey. Real time GNSS networks. RTK-GNSS applications, NRTK-GNSS applications.									
GNSS processing. Reporting and archiving in GNSS measurements.										

## **III. Semester**

Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS201	Remote Sensing	2	0	0	3	2	2	Compulsory		
Introduction to Remote Sensing. Electromagnetic Energy and Its Properties. Passive Sensors. Active								ensors. Active		
Sensors. Platforms. Image and Features. Image Correction. Image Enhancement and Interpretation.										
Image Classifica	ation and Accuracy Determination.	GIS a	and F	Remo	te Sensin	g Re	lationship.	Satellites and		
Properties. Rem	ote Sensing Softwares. Remote Se	nsing	g App	olicati	ions.	-	-			
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS203	Project Design and	3	0	0	5	3	3	Compulsory		
	Management in Geographic									
	Information Systems									
								nic Information		
	ing the World. Project Design in GIS	What is Project and Project Management? Spatial Thinking. Spatial Thinking in Geographic Information Systems. Modeling the World. Project Design in GIS. Project Management and Objectives in GIS. Project								
Design Methodology in GIS. Decision Making in GIS Projects.										
Design Methodo					agement a	and C	bjectives	in GIS. Project		
	logy in GIS. Decision Making in GIS	S Pro	jects				-			
Course Code	logy in GIS. Decision Making in GIS	S Pro	jects P	L	egement a	С	Hours	Туре		
	logy in GIS. Decision Making in GIS Course Name Open Source Geographic	S Pro	jects				-			
Course Code	logy in GIS. Decision Making in GIS Course Name Open Source Geographic Information Systems	S Pro	jects P	L	ECTS	С	Hours	Туре		
Course Code CBS205	Course Name Open Source Geographic Information Systems Applications	S Pro	pjects P 2	0	ECTS 4	<b>C</b> 2	Hours 3	Type Compulsory		
Course Code CBS205 The Interface. C	Course Name Open Source Geographic Information Systems Applications reating a Basic Map. Classifying Veo	S Pro T 1	pects P 2 Data.	0 Crea	ECTS 4 ting Maps	C 2 . Crea	Hours 3 ating Vector	Type Compulsory or Data. Vector		
Course Code CBS205 The Interface. Co Analysis. Raste	Open Source Geographic         Information Systems         Applications         reating a Basic Map. Classifying Vec         r Data. Completing the Analysis.	S Pro	P 2 Data.	0 Crea Onlin	ECTS 4 ting Maps ie Resour	C 2 . Crea rces.	Hours 3 ating Vector	Type Compulsory or Data. Vector		
Course Code CBS205 The Interface. Co Analysis. Raste	Course Name Open Source Geographic Information Systems Applications reating a Basic Map. Classifying Veo	S Pro	P 2 Data.	0 Crea Onlin	ECTS 4 ting Maps ie Resour	C 2 . Crea rces.	Hours 3 ating Vector	Type Compulsory or Data. Vector		

Course Code	Course Name	Т	Р	L	ECTS	С	Hours	Туре		
CBS207	Building Geodatabase	1	2	0	4	2	3	Compulsory		
Exploring the geodatabase. Creating and loading data. Managing raster data. Maintaining data integrity using subtypes. Maintaining attributr integrity. Relating data using relationship classes. Adding attachments. Designing geodatabase topologies. Sharing geodatabase. Designing a geodatabase.										
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS209	Spatial Analysis in Geographic Information Systems I	2	2	0	5	3	4	Compulsory		
Surface Analysis ArcGlobe). Arc	GIS and Spatial Analysis. ArcGIS 3D Analysis Extension and Capabilities. Digital Elevation Models. Surface Analysis and Data Conversion. Working with LIDAR and Terrain Data. 3D Modeling (ArcScene-ArcGlobe). ArcGIS Spatial Analysis Extension and Capabilities. Distance and Density Analysis. Interpolation. Statistical Analysis. Reclassification and Superposition of Raster Data.									
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS211	Applications of Geographical Information Systems in Public Sector ment. Preliminary Studies for GIS A	3	0	0	3	3	3	Compulsory		
Government in Government in T Turkey VI: Minist Ministry of Nation The Ministry of Treasury and Min	rnment in Turkey III: Urbanization Turkey IV: Ministry of Energy ar Turkey V: Ministry of Agriculture and try of Agriculture and Forestry. GIS and Defense and the Naval Forces. Of Transportation and Infrastructure. Of nistry of Finance. GIS Applications in Data Download Applications via GIS	nd N Appli GIS A GIS A n Ce	atura estry catio Applic Applic ntral	al Re . GIS ons in cation	sources. Application Central Constrations in Central As in Central	GIS ons i iover al Go ral G	Application n Central nment in T overnment overnment	ons in Central Government in Furkey VII: The t in Turkey VIII: t in Turkey IX:		
Course Code	Course Name	Т	D		ECTS	С	Hours	Туре		
CBS251	Geographic Information Systems Applications in Disaster Management	2	2	0	3	3	4	Elective		
Management an and GIS Applica	aster. Disaster Management. Disas d GIS Applications I: Flood Risk A ations II: Earthquake Risk Analysis. Landslide Risk Analysis. Course Name	naly	sis. E	Earth	quake and	d GIS	S. Disaste	r Management ment and GIS		
			-					Туре		
Urban Knowledg Areas of KBS. K Management. KI KBS. KBS Case	CBS253Urban Information Systems200322ElectiveUrban Knowledge. Concepts Related to KBS. Urban Information and Spatial Data. Usage and Application Areas of KBS. KBS Data, Resources and Quality. Data Preparation. Spatial Data Analysis in KBS. Data Management. KBS Industry and KBS Software Organizations. KBS on the Internet. Data Visualization in KBS. KBS Case Studies.									
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS255	Spatial Data Standards and Infrastructure	2	0	0	3	2	2	Elective		
Spatial Data Standards concept definition. The importance of spatial data standards Standard requirements in Turkey. Application area of spatial data standards. Spatial data quality and standards. Interoperability concept. INSPIRE Standards and application. OGC Standards. OGC Standards application. ISO Standards. ISO Standards application. W3C Standards. W3C Standard applications.										

## **IV. Semester**

Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре	
CBS202	Remote Sensing Applications	1	1	0	3	2	2	Compulsory	
Applications. Co Modeling Applica Coordination Ap Image Process	Basic Concept Examples in Remote Sensing Programs. Image Merge Applications. Differential Analysis Applications. Controlled and Uncontrolled Classification Examples. Three Dimensional Analysis and Modeling Applications. Topographic Analysis Applications. Modeling and Analysis Applications on Model. Coordination Applications. Applications for Printing Output Format. Vegetation Identification Applications. Image Processing and Accuracy Analysis Applications. Color Band Combination Applications. Classification Applications, Raster and Vector Data Transformation Applications.								
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре	
CBS204	Web Geographic Information	1	2	0	5	2	3	Compulsory	
	Systems								
Sharing. Ready-	g. Cloud Computing and Geograph to-Use Content Management. Cre ations in Web GIS. Hosted Feature	ate V	Veb	Appl	ications L	İsing	ArcGIS (	Online. Layers,	

	gurable Applications. Web AppBuild al Analysis and Geoprocessing Se									
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS206	Mobile Geographic Information Systems	3	0	0	3	3	3	Compulsory		
What is Mobile GIS? What are Mobile GIS Applications? Designing a web map for data generation mobile GIS. Personel Mobile GIS (Data Generation), Enterprise Mobile GIS (data generation). Story Ma with Mobile GIS. Introduction to Application Design in Mobile GIS. Application Design in Mobile GIS.										
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS208	Geographic Information Systems Project	4	0	0	5	4	4	Compulsory		
Integration of se presentation of p	Select of project subject and area. Supply and digitization of data. Processing the data in a GIS software. Integration of semanthic data and establishment of tabular relations. Analysis of the data. Creation and presentation of project final products. Project presentations.									
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS210	Geographic Information Systems Application in Private Sector	3	0	0	3	3	3	Compulsory		
	ontent and method of the course. P			npan						
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
CBS212	Spatial Analysis in Geographic Information Systems II	2	2	0	5	3	4	Compulsory		
Locating. Live T	gement. Finding the Best Way for I raffic Data Arrangements and Usa s. ArcGIS Geostatistical Analysis Ex Course Name	ge or	n Net	work	Dataset.	Som				
CBS252	3D Modeling	2	1	0	3	3	3	Elective		
Rule Based Mod Facade Arrange	Jser Interface. Project Management eling. Data Import. Geographical Co ment. Web and 3D.	ordir			ta Export.	Attrik	oute Mapp	ing. Interactive		
Course Code	Course Name	Т	Р	L	ECTS	С	Hours	Туре		
CBS254	Geographic Information Systems in Forestry Applications	2	1	0	3	3	3	Elective		
Transformation I Time Information dimensional ima ArcGIS Explorer	prest Maps. Forest Database Design Functions and Data Transfer. Que n. Building the Infrastructure for Spa ge acquisition. Geographical Proce and Google Earth. Network Analys forest Engineering.	stioni tial A essin	ing a naly: g To	ind F sis. D ols ir	Reporting Determinat	of Go tion o Engin	eographic f Potentia eering. Da	al Data. Using I Fire Areas. 3- ata Transfer to		
Course Code	Course Name	Т	Ρ	Г	ECTS	С	Hours	Туре		
CBS256	Programming with Geographic Information Systems	2	1	0	3	3	3	Elective		
Information Systems Running scripts in Python. Describing data. Automating scripts with lists. Working with selections. Working with geometry objects. Sharing scripts. Debugging scripts and handling runtime errors. Automating map production. Add-in logic with ArcGIS for Desktop. Program development, desktop add-in, program development climate, desktop add-in creation. ArcObject API and Using Visual Studio. Interactive interaction with maps, image exchange, data queries, combo box, add-in deployment, add-in security, code integrity.										
Course Code	Course Name	Т	Ρ	L	ECTS	С	Hours	Туре		
Course CodeCourse NameTPLECTSCHoursTypeCBS258Drone (UAV) Technology300333ElectiveExplaining the content and method of the course. History and historical development of UAVs. Aircraft, flight dynamics and flight principles. Air law and responsibilities. MeteorologicalInformation. ATC Procedures. Aviation freiology. UAV structural components and aerodynamics. Gimbaland useful load (camera etc.) docking. Navigation and Operation. Controllable systems and propulsionsystems. Warnings, Precautions, Preparations, Arrangements and Appliances.										