

**O‘ZBEKISTON RESPUBLIKASI  
OLIY TA’LIM, FAN VA INNOVATSIYALAR VAZIRLIGI**

**SAMARQAND DAVLAT ARXITEKTURA – QURILISH UNIVERSITETI**

**“KELISHILGAN”**  
o‘quv ishlari bo‘yicha  
prorektor  
M.T. Shodmonqulov  
Ro‘yxatga olindi: № 9/a  
«30» avgust 2024 yil



**INFORMATIKA FANLARIGA KIRISH**

**FAN DASTURI**

**Bilim sohasi:** 700000 – Muhandislik, ishlov berish va qurilish sohalari  
**Ta’lim sohasi:** 720000 – Ishlab chiqarish va ishlov berish sohalari  
**Ta’lim yo‘nalishi:** 60721500 – Geodeziya va geoinformatika

**Samarqand – 2024**

**Kurs ma'lumotlari**  
Course Information Form

<b>Modul kodi</b> Code GEO1050	<b>O'quv yili</b> 2024-2025	<b>Semestr</b> 2	<b>ECTS – Kreditlar</b> 2-semestr -4		
<b>Modul turi</b> Majburiy	<b>Ta'lim tili</b> O'zbek/rus		<b>Auditoriya soatlari</b>		<b>Mustaqil ta'lim</b> (soat/hafta) Independent Education (hour/week)
<b>Fan nomi</b> Title	<b>Jami yuklama</b>	<b>Ma'ruza</b> (soat/hafta) Lecture (hour/week)	<b>Amaliy</b> (soat/hafta) Practical (hour/week)	<b>Laboratoriya</b> (soat/hafta) Laboratory (hour/week)	
Informatika fanlari kirish	2-semestr -120	2-semestr -2	2-semestr -2		2-semestr - 4

<b>Dastlabki shart</b> Prerequisite	<b>Yo'q</b> None
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<b>Semestr</b> Semestr	<b>Bahorgi</b> Spring
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<b>Kurs tili</b> Course language	<b>O'zbek, Ingliz, Rus</b> Uzbek, English, Russian
<b>O'quv kursi</b> Level of Course	<b>Birinchi kurs</b> First Cycle
<b>Ta'lim yo'nalishlari</b> Course type	60721500 – Geodeziya va geoinformatika
<b>Kurs toifasi</b> Course Category	Asosiy Core Courses
<b>Dars shakli</b> Mode of Delivery	An'anaviy (Yuzma – yuz muloqot) Face – to - face

<b>Ma'sul kafedra</b> Owner academic unit	Axborot texnologiyalari Information technology
<b>Kursga ma'sul</b> Cours Coordinator	Q.M. G'aybulov
<b>O'qituvchilar</b> Instructor(s)	K.S. Islamov, B.E. Elmurodov
<b>Yordamchilar</b> Asistant(s)	J.K. Haydarov

<b>Fanni o'qitishdan maqsad</b> Course objectives	Informatika va axborot texnologiyalari haqidagi bilimlarni mustahkamlash, analitik fikrlashni rivojlantirish Consolidation of general information texnology, development of analytical thinking.
<b>Fanning mazmuni</b> Course content	Kompyuterni tashkil etuvchilari, Algoritmalar, Python dasturlash tilida vektor va matritsa operatsiyalari, Kiritish va chiqarish operatorlari, Python dasturlash tilida grafik fayllar bilan ishlash, Matematik funksiyalar grafiklarini chizish. Computer Organization; Algorithms; Programming Languages and Data Structures; Fundamental of Programming Language, Expressions, Numbers, Operators, Functions; Vector and Matrix Operations; Basic Data Analysis, Conditional Statements, Loops, Input-Output Operations, Graphics, Mixed Examples.
<b>Tavsiya qilingan yoki talab qilinadigan adabiyotlar ro'yxati</b> Recommended Or Required Reading	<b>Asosiy adabiyotlar:</b> 1. Eric Matthes. Python Crash Course Paperback.England 2015.205p. 2. Discovering Computers 2016. Tools, Apps, Devices, and the Impact of Texnology. 691 pg. 3. Krishna Rungta. Learn Python in 1 Day: Complete Python Guide with Examples. India 2016. -182 p.

	<p>4. Narasimha Karumanchi. Data Structure and Algorithmic Thinking with Python Paperback. India 2015. 170p.</p> <p>5. Lentin Joseph, Fundamentals of Python for Robotics Programming, 2018</p> <p>6. John Hunt, A Beginners Guide to Python 3 Programming, <a href="http://www.springer.com/series/7592">http://www.springer.com/series/7592</a>, 2019</p> <p>7. Michael J. Ware, Introduction to Python Department of Physics and Astronomy Brigham Young University, 2019</p> <p>8. Hetland, M. L., Norton, P, Wilson, H. B. Introduction to Python Programming, Lecture Notes used in Semester 1 of the module Introduction to computational Physics (U24200, years 2019/2020, 2020/2021)</p> <p>9. Axadov A., Nazarov F. Python tilida dasturlash asoslari (1-qism), SamDU-2020.</p> <p><b>Qo'shimcha adabiyotlar:</b></p> <p>10. Eshtemirov S. Nazarov F. Algoritmash va dasturlash asoslari. O'quv qo'llanma. Samarqand 2019. -208 b.</p> <p>11. U.A. Nazarov, Informatika faniga kirish, darslik – 2023</p> <p>12. M.T. Shodmonqulov Informatika faniga kirish, o'quv qo'llanma (amaliy mashg'ulotlarni bajarish uchun), "Ilm Ziyozakat" 2023 yil.</p> <p><b>Axborot manbalari:</b></p> <p>1. <a href="http://www.lex.uz">www.lex.uz</a> – O'zbekiston Respublikasi Qonun hujjatlari ma'lumotlari milliy bazasi;</p> <p>2. <a href="http://www.bologna.yildiz.edu.tr/index.php?r=program/bachelor">http://www.bologna.yildiz.edu.tr/index.php?r=program/bachelor</a></p> <p>3. <a href="https://dasturchi.uz/programming-tutorials/piton-darsliklar">https://dasturchi.uz/programming-tutorials/piton-darsliklar</a></p> <p>4. <a href="https://pythonworld.ru/samouchitel-python">https://pythonworld.ru/samouchitel-python</a></p>
<b>Tavsiya etilgan qo'shimcha dastur komponentlari</b> Recommended Optional Program Components	Yo'q\ (bor bo'lsa yoziladi)  None

## Kursni o'rganish natijalari

### Course learning outcomes

1	Ushbu kursni muvaffaqiyatli tamomlagan talabalar fan dasturi bo'yicha chuqur amaliy va nazariy bilimlarga ega bo'ladilar; Students who successfully complete this course; they will have in-depth practical and theoretical knowledge of the science program;
2	Dasturlash tilida dasturini kompilyatsiya qila oladilar; Can compile a program in a programming language;
3	Dasturlash tilida funksiyalarni yoza oladilar; They can write functions in a programming language;
4	Dasturlash tilida operatorlar shartli operatorlar (if, elif, goto,...) va sikllar (for, do while) bilan ishlay oladilar; In a programming language, operators can work with conditional operators (if, elif, goto,...) and loops (for, do while)
5	Dasturlash tilida massivlar va matritsalaridan foydalana olish qobiliyatiga ega bo'ladilar; They will have the ability to use arrays and matrices in a programming language;
6	Talabalar dasturlash tilida grafikadan foydalana oladilar; Students can use graphics in a programming language;
7	O'z fikr-mulohaza va xulosalarini asosli tarzda aniq bayon eta olish malakalariga ega bo'ladilar. They will have the skills to express their opinions and conclusions clearly.

## Haftalik mavzular va tegishli tayyorgarlik ishlari

### Weekly Subjects and Related Preparation Studies

Hafta Week	Mavzular Themes	Resurslar Related preparation
1.	Kirish. Zamonaviy kompyuterlarning tashkil etuvchilari. Kompyuterlarning asosiy va qo'shimcha qurilmalari.	2 - adabiyot (I-II bob)
2.	Algoritmilar haqida umumiy tushunchalar. Algoritmarni yaratish usullari va xossalari. Chiziqli, tarmoqlanuvchi va	1,4,7-adabiyotlar

	takrorlanuvchi algoritmlar..	
3.	Dasturlash tili asoslari va klassifikatsiyasi. Python dasturlash tili va uning imkoniyatlari. Translyator, kompilyatorlar va interpretatorlar.	1,6,7-adabiyotlar
4.	Python dasturlash tilida ineraktiv rejim, kiritish va chiqarish operatorlari. O'zgaruvchi va o'zgarmaslar.	1, 5, 7, 9 - adabiyotlar
5.	Python dasturlash tilida arifmetik, mantiqiy va munosabat amallari.	7-adabiyot (II bob), 3- adabiyot (I bob)
6.	Python dasturlash tilida arifmetik ifodalar va standart funksiyalar.	1, 7, 9 – adabiyotlar
7.	Python dasturlash tilida chiziqli tarkibli jarayonlarni dasturlash.	7, 9 – adabiyotlar
8.	Python dasturlash tilida tarmoqlanuvchi tarkibli jarayonlarni dasturlash.	7, 9 – adabiyotlar
9.	Python dasturlash tilida takrorlanuvchi tarkibli jarayonlar va parametr bo'yicha dasturlash. For(sikl) operatori. Ichma-ich joylashgan sikllarni tashkil qilish.	1,7,8,9 – adabiyotlar
10.	Sikl qadamlarini tashlab o'tish va sikllarni muddatidan oldin tugatish. Break va Continue operatori va ularning umumiy ko'rinishi.	3,7,8,9 – adabiyotlar
11.	Python dasturlash tilida shartli takrorlanuvchi jarayonlarni dasturlash. While operatori va uning umumiy ko'rinishi.	5,7,8,9 – adabiyotlar
12.	Python dasturlash tilida massivlar va ulardan foydalanish. Bir o'lchovli massivlar. Ikki o'lchovli massivlar. Random funksiyasi. Bir va ikki o'lchovli massivlarga oid dasturlar	2, 7,8,9 - adabiyotlar
13.	Python dasturlash tilida murakkab turlar ro'yxat, kortej, lug'at, to'plam va massivlar.	1,7,8 - adabiyotlar
14.	Python dasturlash tilida funksiyalar va protseduralar tushunchalari. Qism dasturlar, Funksiya tanasini faollashtirish, Global va lokal o'zgaruvchilar, Rekursiv funksiyalar tushunchalari.	7,8,11 - adabiyotlar
15.	Python dasturlash tilida grafik fayllar bilan ishlash. Grafik muhitini faollashtirish. Matematik funksiyalar grafiklarini chizish.	7,8,12 – adabiyotlar

## Baholash jarayoni

Evaluation System

Mashg'ulot turi Activities	Soni Number	Baholash Percentage of Grade
Darsga qatnashish Attendance / participation	30	15
Laboratoriya ishi Laboratory		
Amaliy ish (qo'shimcha vazifa) Application		
Kurs ishi Field work		
Maxsus kurs amalyoti (ish joyida) Special course internship (work placement)		
Testlar Quizzes / studio crtics		
Uyga vazifani baholash Homework assignments	5	10
Ijodiy ish (taqdimot) Presentations / jury	5	5
Loyiha ishi Project		
Seminar Seminar / workshop		
Oraliq nazorat Mid -Terms	2	20

Yakuniy nazorat Final	1	50
O'zlashtirish ko'rsatgichi Percentage of in – term studies		50
Yakuniy imtihon bahosi Percentage of final examination		50
Jami Total		100

<b>ECTS taqsimoti</b> ECTS workload table			
Topshiriqlar Activities	Soni Number	Davomiyligi (soat) Duration (hour)	Umumiy yuklama Total workload
Mashg'ulot soati Course hours	30	2	60
Laboratoriya ishi Laboratory			
Amaliy ish (qo'shimcha vazifa) application			
Kurs ishi Field work			
Mustaqil ta'lim (maslahat) Study hours out of class	5	2	10
Maxsus kurs amalyoti (ish joyida) Special course internship (work placement)			
Uyga vazifani baholash Homework assignments	5	2	10
Testlar / Viktorina Quizzes / studio critics			
Loyiha ishi Project			
Ijodiy ish (taqdimot) Presentations / seminar	5	1	5
Oraliq nazorat Mid – terms (Examination +Examination prep. Duration)	2	10	20
Yakuniy nazorat (nazorat va nazoratga tayyorlanish soati) Final (examination +examination prep.Duration)	1	15	15
		<b>Jami yuklama</b> Total workload	120
		<b>Jami yuklama / 30 (soat)</b> Total workload / 30(h)	120/30=4
		<b>Kredit</b> ECTS credit	4

Qo'shimcha eslatmalar Extra Notes	Yo'q\ (bor bolsa yoziladi) None
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Fan dasturi Mirozo Ulug'bek nomidagi Samarqand davlat Arxitektura-qurilish universitet kengashning 2024 yil 30-avgustdagi 1-sonli bayonnomasi bilan ma'qullangan.

Kafedra mudiri:



K.M. Shaimov

Tuzuvchilar:



B.E. Elmurodov

K.S. Islamov

Q.M. G'aybulov