


O'ZBEKISTON RESPUBLIKASI
OLIV TA'LIM, FAN VA INNOVATSIYALAR VAZIRLIGI
SAMARQAND DAVLAT ARHITEKTURA – QURILISH UNIVERSITETI

“KELISHILGAN”
o'quv ishlari bo'yicha
prorektor 
M.T. Shodmonqulov
Ro'yxatga olindi: № 111/a
«30» avgust 2024 yil



STRUKTURAVIY TIZIM DIZAYNI 1

FAN DASTURI

Bilim sohasi: 700 000 - Muhandislik, ishlov berish va qurilish sohalari
Ta'lim sohasi: 730 000 - Arxitektura va qurilish
Ta'lim yo'nalishi: 60730100-Arxitektura (turlari bo'yicha)

Samarqand – 2024

Kurs ma'lumotlari
Course Information Form

Modul kodi Code ARX2110	O'quv yili 2024-2025	Semestr 4	ECTS – Kreditlar 4-semestr -3		
Modul turi Majburiy	Ta'lim tili O'zbek/rus		Auditoriya soatlari		Mustaqil ta'lim (soat/hafta) Independent Education (hour/week)
Fan nomi Title	Jami yuklama	Ma'ruza (soat/hafta) Lecture (hour/week)	Amaliy (soat/hafta) Practical (hour/week)	Laboratoriya (soat/hafta) Laboratory (hour/week)	
Strukturaviy tizim dizayni 1	4-semestr -90	4-semestr -2	4-semestr -2		4-semestr -2

Dastlabki shart Prerequisite	Yo'q None
----------------------------------------	---------------------

Semestr Semestr	Kuzgi Fall
---------------------------	----------------------

Kurs tili Course language	O'zbek, Ingliz, Rus Uzbek, English, Russian
O'quv kursi Level of Course	Ikkinchi kurs Second course
Ta'lim yo'nalishlari Course type	60730100 – Arxitektura (turlari bo'yicha)
Kurs toifasi Course Category	Asosiy Core Courses
Dars shakli Mode of Delivery	An'anaviy (Yuzma – yuz muloqot) Face – to - face

Ma'sul kafedra Owner academic unit	Arxitektura Department of architectura
Kursga ma'sul Cours Coordinator	Suvonov Obidjon
O'qituvchilar Instructor(s)	Abduraimov Murotbek, Xo'jamov Ziyovuddin, Xaitov Maruf
Yordamchilar Asistant(s)	Masaridinova Nilufar.

Fanni o'qitishdan maqsad Course objectives	Ushbu kursning maqsadi talabalarga turli strukturaviy tizimlarning xatti-harakatlari haqida tushuncha berish va turli materiallardan foydalangan holda ushbu tizimlarni loyihalash qobiliyatiga ega bo'lishdir. The aim of this course is to provide students with an understanding of the behavior of different structural systems and to gain the ability to design these systems using different materials.
Fanning mazmuni Course content	Ushbu kurs odatda binoning 4 ta qurilish elementi: poydevor, devor, orayopma-tomyopma va zinapoyalarning tuzilishi hamda qurilish tamoyillari bilan bog'liq. Ushbu kursda binoni tashkil etuvchi qurilish elementlarning loyihasi va tugunlari muhokama qilinadi. This course is generally related to the structural and constructional principles of four elements of the building: foundation, wall, slab, and stairs. In this course, the design and detailing of the building elements are discussed.

<p>Tavsiya qilingan yoki talab qilinadigan adabiyotlar ro'yxati Recommended Or Required Reading</p>	<p>Asosiy adabiyotlar</p> <ol style="list-style-type: none"> 1. Cansun, M.O., Akyürek, M.E. (2020). Yapı Elemanları-I: Temel ve Duvar. İstanbul: İZÜ Yayınları. 2. Cansun, M.O., Akyürek, M.E. (2023). Yapı Elemanları-II: Döşeme ve Merdiven. İstanbul: İZÜ Yayınları. 3. Melaragno, M. (1991). An Introduction to Shell Structures: The Art and Science of Vaulting. New York, Van Nostrand Reinhold. 4. Engel, H. (1997). Structure Systems. Germany: Hatje Cantz. 5. Burry, M. & Burry, J. (2010). The New Mathematics Of Architecture. London: Thames&Hudson. 6. Billington, D.P. (1983). The Tower and Bridge: The New Art of Structural Engineering. Princeton: Princeton University Press. 7. Allen, E., Zalewski, W. (2010). Form and Forces, John Wiley and Sons. 8. Macdonald, A.J. (2001). Structure as Architecture, Architectural Press, Elsevier, 2nd Ed. 9. Schierle, G.G. (2003). Structures in Architecture, Custom Publishing. 10. Charleson, A.W. (2015). Structure as Architecture, Elsevier, 2nd Ed. 11. Ching, F. D. K., Onouye, B. S., and Zuberbuhler, D. (2013). Building Structures Illustrated: Patterns, Systems, and Design. Wiley.
<p>Tavsiya etilgan qo'shimcha dastur komponentlari Recommended Optional Program Components</p>	<p>Yo'q\ (bor bo'lsa yoziladi) None</p>

Kursni o'rganish natijalari

Course learning outcomes

1	<p>Strukturaviy tizimlarning tarixiy rivojlanishi haqida bilimga ega bo'lish. To have knowledge about the historical development of structural systems.</p>
2	<p>Zilzila mexanizmlari, tuproq turi, tuproq-tuzilma o'zaro ta'siri (seysmik to'lqin, magnituda, tezlanish, intensivlik, suyultirish) haqida ma'lumotlarga ega bo'ladi. Earthquake mechanisms, soil type, soil-structure interaction (seismic wave, magnitude, acceleration, intensity, liquefaction) will have information about.</p>
3	<p>Milliy va xalqaro zilzila normalari doirasida muntazam qurilish tamoyillari va strukturaviy tizimdagi tartibsizliklar turlari haqida ma'lumotga ega bo'ladi. Regular construction principles and irregularity in the structural system within the framework of national and international earthquake regulations will have information about the types.</p>
4	<p>Turli konstruktiv tizimlar (temir-beton, yig'ma, po'lat, yog'och va toshlar) va binolarni loyihalash mezonlari haqida bilimga ega bo'lish. Gain knowledge of different structural systems (reinforced concrete, prefabricated, steel, timber and masonry) and building design criteria.</p>
5	<p>Amaldagi milliy va xalqaro normalarga muvofiq strukturaviy tizimini loyihalash va elementlarning o'lchamlarini o'rganish. It is learned frame system design and sizing of elements according to current national and international regulations.</p>

Haftalik mavzular va tegishli tayyorgarlik ishlari

Weekly Subjects and Related Preparation Studies

Hafta Week	Mavzular Themes	Resurslar Related preparation
1.	Strukturaviy tizimning ta'rifi va tarixiy rivojlanishi, qurilish materiallari, struktura yuklariga ta'sir qiluvchi qurilish materiallari; ramka tizimini tashkil etuvchi strukturaviy elementlar, barqarorlikni ta'minlash, devorchilik, yog'och, po'lat, temir-beton, yig'ma beton konstruksiyalarni loyihalash	Adabiyot 1
2.	Zamin va zilzilalar, ta'riflar (plastinka, yoriq mexanizmi, seysmik to'lqinlar, fokus chuqurligi, zilzila markazi, yoriqlarga perpendikulyar masofa, kattalik, tezlanish, intensivlik) tuproq turiga, suv ta'siriga, bino qurilishiga qarab poydevor turini tanlash.	Adabiyot 2
3.	Tuproq turlari, tuproq va strukturaning o'zaro ta'siri (tezlanishning kattalashishi va suyuqlanishning strukturaga ta'siri). Vertikal va gorizontal strukturaviy tizimning tartibsizliklari (burilish, yumshoq / zaif qavat, qisqa ustun, bolg'alash), kombinatsiya turlari.	Adabiyot 3
4.	Temir-beton strukturaviy tizim turlari: prefabrik va quyma regil va plitalar.	Adabiyot 4,5
5.	Temir-beton konstruksiya tizimini milliy uslubda loyihalash qanunlari: karkas, temir-beton devor, zinapoyalar.	Adabiyot 3,4
6.	Temir-beton konstruksiya tizimini xalqaro standartlarda loyihalash tamoyillari: karkas, temir-beton qirqish devori, zinapoya.	Adabiyot 1,4
7.	Ko'p qavatli binolar (temir-beton devorlar, liftlar va zinapoyalar) uchun temir-beton konstruktiv tizimni loyihalash mezonlari.	Adabiyot 5
8.	Temir-beton konstruksiya tizimini loyihalash uy vazifasini muhokama qilish va uni yuklash orqali sinab ko'rish.	Adabiyot 5
9.	Tosh va g'ishtli binoning strukturaviy tizimini loyihalash: Yog'och yoki tosh plitalar.	Adabiyot 6
10.	Yog'ochdan yasalgan binolarning strukturaviy dizayni: milliy tajriba.	Adabiyot 6,7
11.	Yog'ochdan yasalgan binolarning strukturaviy dizayni: xorijiy tajriba.	Adabiyot 7
12.	Yengil ramkali po'latdan yasalgan strukturaviy tizim dizayni.	Adabiyot 8
13.	Og'ir ramkali po'latdan yasalgan strukturaviy tizim dizayni.	Adabiyot 10
14.	Temir-beton va po'lat (gibrid) strukturaviy tizimlarini loyihalash.	Adabiyot 11

15.	Kosmik truss strukturaviy tizimini (ko'priq) loyihalash uy vazifasini muhokama qilish va uni yuklash orqali sinovdan o'tkazish.	Adabiyot 10
-----	---------------------------------------------------------------------------------------------------------------------------------	-------------

Baholash jarayoni

Evaluation System

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

ECTS taqsimoti

ECTS workload table

Topshiriqlar Activities	Soni Number	Davomiyligi (soat) Duration (hour)	Umumiy yuklama Total workload
Mashg'ulot soati Course hours	15	3	45
Laboratoriya ishi Laboratory			
Amaliy ish (qo'shimcha vazifa) application			
Kurs ishi Field work			
Mustaqil ta'lim (maslahat) Study hours out of class	1	45	45
Maxsus kurs amalyoti (ish joyida) Special course internship (work placement)			
Uyga vazifani baholash Homework assignments			
Testlar / Viktorina Quizzes / studio critics			

Loyiha ishi Project			
Ijodiy ish (taqdimot) Presentations / seminar			
Oraliq nazorat Mid – terms (Examination + Examination prep. Duration)			
Yakuniy nazorat (nazorat va nazoratga tayyorlanish soati) Final (examination +examination prep.Duration)			
		Jami yuklama Total workload	90
		Jami yuklama / 30 (soat) Total workload / 30(h)	90/30=3
		Kredit ECTS credit	3

Qo'shimcha eslatmalar Extra Notes	Yo'q\ (bor bolsa yoziladi) None
--------------------------------------	------------------------------------

Fan dasturi Mirozo Ulug'bek nomidagi Samarqand davlat Arxitektura-qurilish universiteti kengashning 2024 yil 30-avgustdagi 01-sonli bayonnomasi bilan ma'qullangan.

Kafedra mudiri: L.A. Raximov

Tuzuvchilar: M. M. Abduraimov

Z. S. Xujamov