

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

**SAMARQAND DAVLAT ARXITEKTURA – QURILISH UNIVERSITETI**

**“KELISHILGAN”**

O‘quv ishlari bo‘yicha  
prorektor

M.T. Shodmonqulov

Ro‘yxatga olindi: № 25010

«30» avgust 2024 yil

**“TASDIQLAYMAN”**

Rektor

Ch.J. Turkyilmaz

«30» avgust 2024 yil



**SUYUQLIK MEXANIKASI 1**

**FAN DASTURI**

**Bilim sohasi:** 700 000 - Muhandislik, ishlov berish va qurilish sohalari  
**Ta‘lim sohasi:** 710 000 - Muhandislik ishi  
**Ta‘lim yo‘nalishi:** 60713500 – Mexanika muhandisligi

**Kurs ma'lumotlari**  
Course Information Form

Modul kodi Code MAS2080	O'quv yili 2024-2025	Semestr 3	ECTS – Kreditlar 3-Semestr - 5			
Modul turi Majburiy	Ta'lim tili O'zbek/rus		Auditoriya soatlari			Mustaqil ta'lim
Fan nomi Title	Jami yuklama	Ma'ruza (soat/hafta) Lecture (hour/week)	Amaliy (soat/hafta) Practical (hour/week)	Laboratoriya (soat/hafta) Laboratory (hour/week)	(soat/hafta) Independent Education (hour/week)	
Suyuqlik mexanikasi 1	3-Semestr - 120	3-Semestr -3	-	-	3-Semestr-5	

<b>o'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>Ikkinchi kurs</b> Second Cycle
<b>Ta'lim yo'nalishlari</b> Course type	60713500 – Mexanika muhandisligi
<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	Atrof muhit muhandisligi Environmental engineering
<b>Kursga ma'sul</b> Cours Coordinator	Norqulov Bahodir
<b>O'qituvchilar</b> Instructor(s)	Artikboyev Xusniddin
<b>Yordamchilar</b> Asistant(s)	Dildora Sabirova, Artikboyev Xusniddin

<b>Fanni o'qitishdan maqsad</b> Course objectives	<p>Talabalarda suyuqlikning muvozanati, harakatdagi qonuniyatlari va jarayonlarini hamda gidravlik jarayonlar, quvurlardagi qarshiliklar, suv ta'minoti va oqova suvlarni oqizish inshootlarning gidravlik hisobini o'rganish, amaliyotda tatbiq etish ko'nikmasini hosil bo'lishdan iborat.</p> <p>In students, the balance of fluid, its laws and processes in movement and hydraulic processes, resistances in pipes, water supply and drainage of wastewater consist in the formation of the skill of hydraulic accounting of structures, implementation in practice.</p>
<b>Fanning mazmuni</b> Course content	Muvozanatda va harakatdagi suyuqlik qonunlari va ularni texnik masalalarni yechishda qo'llash usullari haqida, suyuqliklarning



	<p>fizik xususiyatlari va ulardan amaliyotda foydalanish holatlar, suyuqliklardagi jism va ularning o‘zaro ta’siri; suv ta’minoti quvurlarni gidravlik hisoblari, gidravlik jarayonlar haqida tasavvurga ega bo‘lishi.</p> <p>Oqimning gidravlik elementlarini, suyuqlikning laminar va turbulent harakat tartiblarini, suvning quvurlarda harakati qonuniyatlarini va gidravlik parametrlarini aniqlashni, gidravlik qarshiliklarni va ularni aniqlash uslublarini bilish va ulardan foydalana olishi.</p> <p>About the laws of liquids in equilibrium and motion and the methods of their application in solving technical issues, physical properties of liquids and their use in practice states, the body in liquids and their interaction; the fact that the water supply has an idea of hydraulic calculations of pipes, hydraulic processes.</p> <p>The ability to know and use the hydraulic elements of the flow, the laminar and turbulent modes of movement of the fluid, the laws of movement of water in pipes and the determination of hydraulic parameters, hydraulic resistances and methods of their detection.</p>
<p><b>Tavsiya qilingan yoki talab qilinadigan adabiyotlar ro‘yxati</b> Recommended Or Required Reading</p>	<ol style="list-style-type: none"> <li>1. Bazarov D.R., Karimov R.M., Matyakubov B.Sh., Xidirov S.Q., Gidravlika -1 Toshkent-2018 yil-539 b.</li> <li>2. Bazarov D.R., Karimov R.M., Matyakubov B.Sh., Xidirov S.Q., Gidravlika -2 Toshkent-2018 yil-556 b.</li> <li>3. Umarov A.Yu. «Gidravlika». Toshkent, «Uzbekistan», 2002.- 367 b.</li> <li>4. Ubaydullaev P.X., Ubaydullaev B.P..Amaliy suyuqlik mexanikasi. Oliy o‘quv yurtlar uchun o‘quv qo‘llanma.To‘ron-Iqbol.Toshkent 2006.</li> <li>5. R.R.Chugayev., Gidravlika., Energoizdat, 1982 god-672 str.</li> <li>6. A.M.Arifjanov, Ch.Fayziev, A.U.Toshxo‘jaev., Gidravlika, Yoshlar nashriyoti uyi, Toshkent-2020 yil -370 bet</li> <li>7. B.M.Norqulov, Suyuqlik va gaz mexanikasidan masalalar yechish usullari, SamDU nashriyoti 2022 yil-154 bet</li> <li>8. Norqulov B.M, Tadjieva D.O. «Suyuqlik va gaz mexanikasi» fanidan (masalalar to‘plami) uslubiy qo‘llanma Samarqand, 2020 y.-74 b.</li> <li>9. Suyuqlik va gaz mexanikasi fanidan laboratoriya ishlarini bajarish uchun uslubiy qo‘llanma. Norqulov B.M., X.Artikboev, D.Tadjieva SamDAQI. Samarqand 2022</li> </ol>
<p><b>Tavsiya etilgan qo'shimcha dastur komponentlari</b> Recommended Optional Program Components</p>	<p>Yo‘q\ (bor bo‘lsa yoziladi)</p> <p>None</p>

<b>Kursni o‘rganish natijalari</b> Course learning outcomes	
1.	Gidrostatik bosim; Hydraulic pressure;
2.	Suyuqlikni fizik xossalari; Physical properties of the liquid in the moment;
3.	Arximed qonuni; The blood of Archimedes;
4.	Bosim va uni o‘lchash asboblari; Pressure and instruments of pressing it;

5.	Suyuqlik energiyasini saqlanish qonuniyati; The law of conservation of fluid energy;
6.	Suyuqlik va gazlarning gidrodinamikasini; Hydrodynamics of liquids and gases;
7.	Suyuqlik harakat tartiblari; Fluid motion arrangements;
8.	Gidravlik qarshiliklar; Beat hydraulic resistors;
9.	Naporli quvurlarda bosim kamayishiga gidravlik qarshilikni ta'siri; Effect of hydraulic resistance on pressure reduction in naporli pipes of the furnace;
10.	Quvurlarda napor kamayishiga darsi koeffitsentini qo'llash sohalari; Areas of enslavement of Darcy coeficent to napor reduction in quavers;
11.	Bosimli quvurlarda gidravlik hisoblash; Hydraulic calculation in pressurized pipes;

### Haftalik mavzular va tegishli tayyorgarlik ishlari

#### Weekly Subjects and Related Preparation Studies

Hafta Week	Ma'ruza mavzular Themes	Resurslar Related preparation
1.	Kirish. Umumiy ma'lumotlar. Suyuqliklarning fizik xossalari.	1,2,3-darslik (I bob)
2.	Gidrostatika. Hidrostatik bosim va uning xossalari.	1,2,3-darslik (I bob)
3.	Gidrostatikaning asosiy tenglamasi.	1,2,3-darslik (I bob)
4.	Suyuqlikning tekis devorga va egri sirtlarga bosim kuchi.	1,2,3-darslik (I bob)
5.	Arximed qonuni.	1,2,3-darslik (I bob)
6.	Gidrodinamika asoslari.	1,2,3-darslik (I bob)
7.	Suyuqlik oqimi, uning harakat kesimidagi sarfi va o'rtacha tezligi.	1,2,3-darslik (I bob)
8.	Gidrodinamikaning asosiy masalasi. Uzlaksizlik tenglamasi.	1,2,3-darslik (I bob)
9.	Ideal va Real suyuqlikning to'liq oqimi uchun. D.Bernulli tenglamasi.	2-darslik (I bob)
10.	Bernulli tenglamasining gidravlik, geometrik va energetik manolari.	2-darslik (I bob)
11.	Suyuqlik harakatining tartiblari. Suyuqlik harakatining ikki tartibi.	2-darslik (II bob)
12.	Gidravlik qarshiliklar.	2-darslik (II bob)
13.	Gidravlik ishqalanish koeffitsienti uchun formulalar va ularning qo'llanilish sohalari.	2-darslik (III bob)
14.	Quvurlarni gidravlik hisoblash.	2-darslik (IV bob)
15.	Murakkab quvurlarni gidravlik hisoblash.	2-darslik (IV bob)

### Baholash jarayoni

#### Evaluation System

Mashg'ulot turi Activities	Soni Number	Baholash Percentage of Grade
Darsga qatnashish Attendance / particition	15	10
Laboratoriya ishi Laboratory		
Amaliy ish (qo'shimcha vazifa) Application		
Kurs ishi Field work		
Maxsus kurs amalyoti (ish joyida)		



Special course internship (work placement)		
<b>Testlar</b> Quizzes / studio critics		
<b>Uyga vazifani baholash</b> Homework assignments		
<b>Ijodiy ish (taqdimot)</b> Presentations / jury		
<b>Loyiha ishi</b> Project		
<b>Seminar</b> Seminar / workshop		
<b>Oraliq nazorat</b> Mid -Terms	2	30
<b>Yakuniy nazorat</b> Final	1	50
<b>O'zlashtirish ko'rsatgichi</b> Percentage of in – term studies		50
<b>Yakuniy imtihon bahosi</b> Percentage of final examination		50
<b>Jami</b> Total		100

<b>ECTS taqsimoti</b> ECTS workload table			
<b>Topshiriqlar</b> Activities	<b>Soni</b> Number	<b>Davomiyligi (soat)</b> Duration (hour)	<b>Umumiy yuklama</b> Total workload
<b>Mashg'ulot soati</b> Course hours	15	3	45
<b>Laboratoriya ishi</b> Laboratory			
<b>Amaliy ish (qo'shimcha vazifa)</b> application			
<b>Kurs ishi</b> Field work			
<b>Mustaqil ta'lim</b> Study hours out of class	15	5	55
<b>Maxsus kurs amalyoti (ish joyida)</b> Special course internship (work placement)			
<b>Uyga vazifani baholash</b> Homework assignments			
<b>Testlar / Viktorina</b> Quizzes / studio critics			
<b>Loyiha ishi</b> Project			
<b>Ijodiy ish (taqdimot)</b> Presentations / seminar			
<b>Oraliq nazorat</b> Mid – terms (Examination +Examination prep. Duration)	2	5	10
<b>Yakuniy nazorat (nazorat va nazoratga tayyorlanish soati)</b>	1	10	10

Final (examination +examination prep. Duration)		
<b>Jami yuklama</b> Total workload		120
<b>Jami yuklama / 45 (soat)</b> Total workload / 45 (h)		120/30=4
<b>Kredit</b> ECTS credit		4

<b>Qo'shimcha eslatmalar</b> Extra Notes	Yo'q\ (bor bolsa yoziladi) None
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Fan dasturi Samarqand davlat arxitektura qurilish universiteti Kengashning 2024 yil 30-avgustdagi 1- sonli yigilishi qarori bilan ma'qullangan.

Tuzuvchilar:

B.M.Norqulov  
X.B.Artikboyev  
D.A.Sabirova

Kafedra mudiri:

B.M.Norqulov