

# METHODOLOGICAL RECOMMENDATIONS FOR USING THE HISOBLY PLATFORM

Soliyeva Gavharoy Yodgorjon qizi  
PhD Student at Namangan State University  
E-mail: gavharoysoliyeva8@gmail.com  
Tel: +998 97 250 70 90

## Abstract

This thesis examines the appearance of the software and methodological complex for "Computational Methods" taught in higher education institutions, experimental research work, and educational content of the platform. Also, the methodological guide "Methodological recommendations for working on the Hisobly platform" on the use of the software and methodological complex was reviewed.

**Keywords:** Computational methods, software and methodological complex, experimental research, educational content, Hisobly platform.

## Introduction

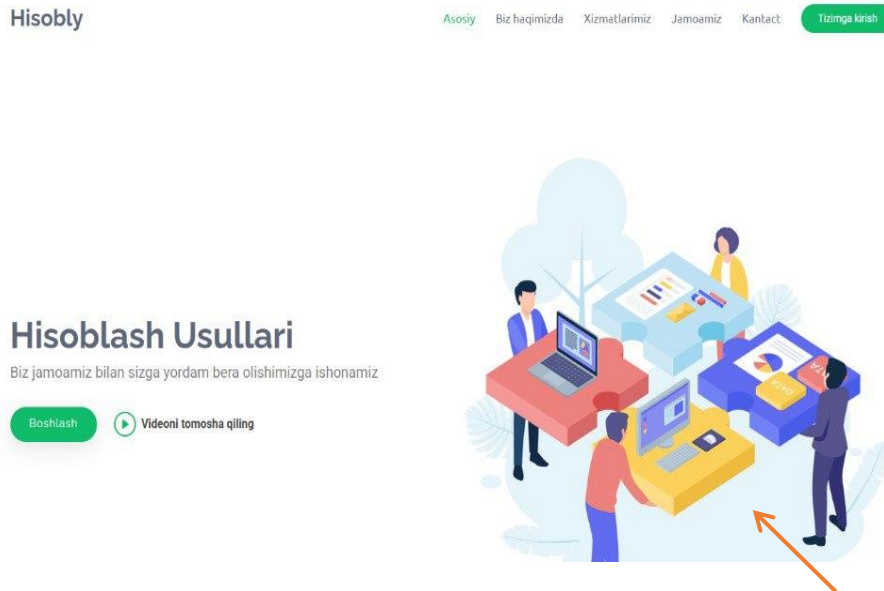
Our software and methodological complex for the subject "Computational Methods" for the direction of higher education institutions 60540100 - Mathematics creates a basis for further improving the scientific potential of students in the subject, for the wide use of information and communication technologies. Our software and methodological complex for "Computational Methods" that we created is used to solve problems that do not have a clear solution or are difficult to calculate in various ways. We use this platform called "Hisobly" to help students spend their free time productively, as well as search for and analyze solutions to problems through mathematical constructions, block diagrams in the Maple, MathCAD, Python programming languages, and Flowgorithm.

Each student can register via their email and independently master the subject of "Computational Methods" through the platform. The platform contains theoretical information on "Computational Methods", practical exercises and assignments, video lectures, presentations, final test tasks to test their knowledge, as well as special methodological instructions for using the platform and uploading practical exercises. This allows students to learn remotely, making the most of their time, and monitor their results step by step. Also, the student can receive advice and methodological instructions from the teacher online on all problems that may arise during this time. This situation increases the possibility of trust and discussion between the student and the teacher.



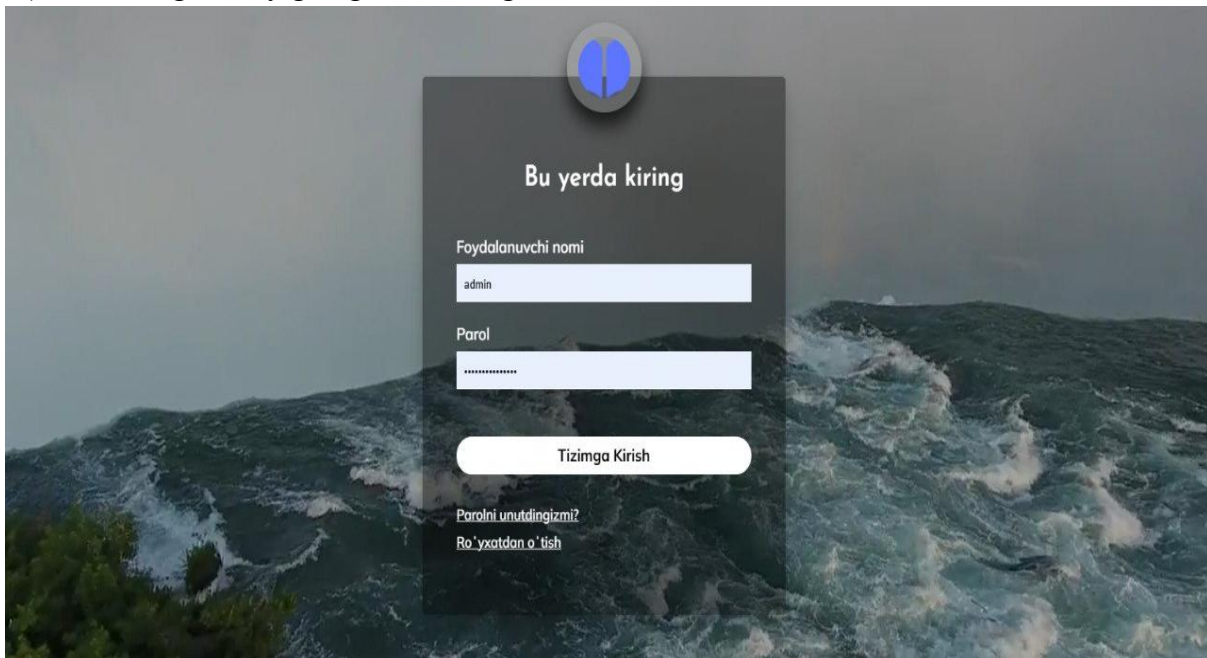
## RESEARCH METHODOLOGY

1) To subscribe to the "Calculation Methods" course, launch any Internet browser, enter the address [www.hisus.uz](http://www.hisus.uz) in the address bar and confirm. The general appearance of the platform is as follows, first go to the "Login" section.



2.4- Fig. Launch the program.

2) We can register by going to the "Registration" section.



2.5- Fig. Become a member



2) Enter “Username”, “First Name”, “Last Name”, “E-mail Address” and “Password”. Please note that the password must be at least 8 characters long. Then click the “Register” button.

**Bu yerda ro'yxatdan o'ting**

Foydalanuvchi nomi

Ism

Familiya

E-pochta manzili

Parol

Ro'yxatdan O'tish

Tizimga kirish

2.6- Fig. Filling out the questionnaire

2) From this window, enter the previously created "Username and Password" and click "Login".

**Bu yerda kiring**

Foydalanuvchi nomi

Soliyevagozal

Parol

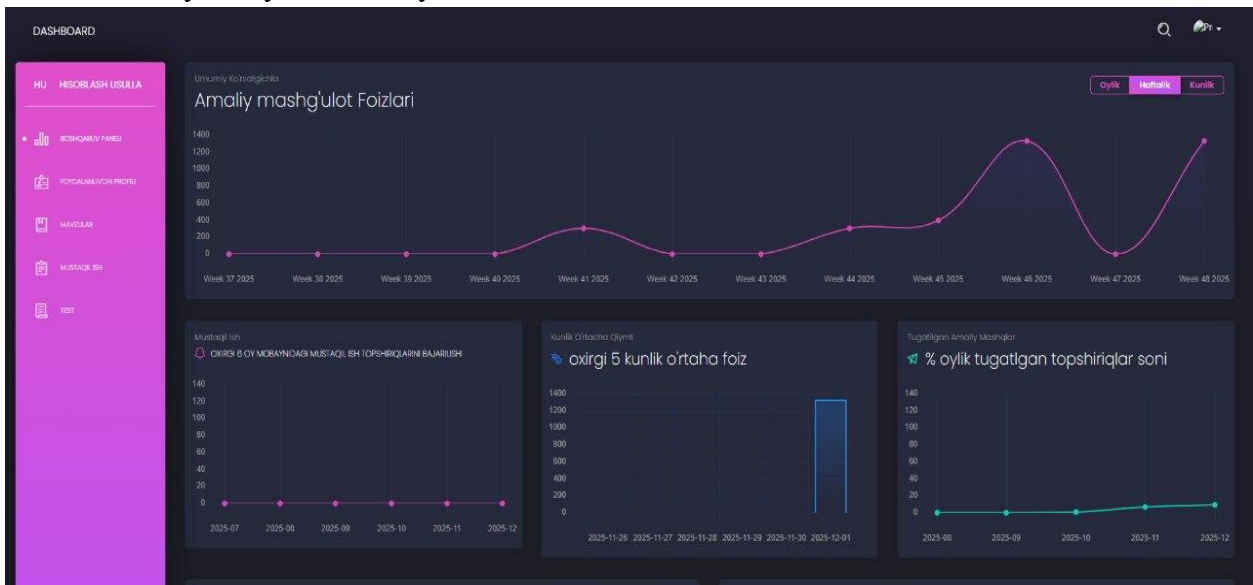
Tizimga Kirish

Parolni unutingizmi?

Ro'yxatdan o'tish

2.7- Fig. Confirming a list entry

2) This learning content graphically represents the tasks completed in the practical exercises. It shows monthly, daily and weekly results.



2.8- Fig. Educational content of the course "Computational Methods"

2) On the Hibly platform, we can receive all types of files as lecture and practical training materials and post practical training assignments.

We go to the "Topics" section of the educational content and get complete information on the topic.

The screenshot shows a web page with a sidebar menu on the left containing topics like '1-5. XATOLIKLAR NAZARIYASI', '2-5. ALGEBRANING SONLI USULLARI', '3-5. CHATS TAQRIBIY YECHISH', '4-5. CHIZIQSIZ TENGLAMALARNI TAQRIBIY YECHISH', '5-5. CHIZIQSIZ TENGLAMALAR SISTEMASINI TAQRIBIY YECHISH', '6-5. MATSITSANING XOS SON VA XOS VEKTORLARI TOPISH', '7-5. FUNKSIYALARNI YAQINLASHTIRISH MASALASI', '8-5. NYUTON INTERPOLYASION FORMULASI', and '9-5. FUNKSIYANI INTERPOLYATSİYALASHI AYRIM METODLARI'. The main content area is titled 'Bartaraf qilish mumkin bo'lmagan xatoliklar' and discusses mathematical errors and solutions.

qo'lash foydasidir, chunki bunda yetarli darajadagi shartlarni qanoatlantiruvchi shtati yechimini olish imkoniyati yo'qdir. Shuni ham aytish kerakki, ayrim korrek qo'yilmagan masalalarni yechish usullari ham yaratilgan. Bu usullar dastlabki qo'yilgan masalani emas, unga korrek qilib qo'yilgan yordamchi masalani yechishga asoslangandir. Yordamchi masalada qo'shimcha parametrga qatnashadi. Shunday yo'l bilan dastlabki masala quyulayotiriladi. Ar bo'lsa, yordamchi masalaning yechimi dastlabki masalaning yechimiga intilishi kerak. Yuqoridagiga o'xshash hisoblash usullarining korreklik tushunchasi kiritilgan. Agar masaladagi parametrlarning barcha qiymatlarida soni yechim mavjud, yagona va turg'un bo'lsa, u korrek deyiladi.

Hisoblash usullari bilan topilgan yechim masalaning haqiqiy yechimiga yaqin bo'lishi kerak. Buni hisoblash usullarining yaqinlashishi tushunchasi yordamida tahlil qilishimiz mumkin. Diskretlashgan masalalar misolida yaqinlashish tushunchasini quyidagicha berishimiz mumkin. Agar diskretlashirilgan masalaning yechimi diskretlashirish parametri nolga intilganda dastlabki uzluksiz masalaning yechimiga intilsa, sonli usul yaqinlashadi deyiladi.

Hisoblash usullari ichida eng ko'p ishlatiladiganlari ayirmali usullardir. Bu usullar yordamida uzluksiz matematik modellardan diskret modellar xosil qilinadi. Buning uchun, masala qaralayotgan soha diskret nuqtalar majmuasi-to'rt bilan almashiriladi, tenglamadagi, chegaraviy va boshlang'ich shartlardagi kossalardan chekli ayirmalarga o'tiladi. Natijada, to'rt nuqtalarida aniqlangan funksiyalarga nisbatan algebraik tenglamalar sistemasi xosil qilinadi. Ma'lumki, matematik modellar asosida yotuvchi tenglamalar aksariyat hollarda fizika, mexanikadagi saqlanish qonunlari asosida tuziladi. Bu qonunlar matematik modeldagi tenglamalar-diskret tenglamalar-chekli ayirmali sxemalar bilan almashirilganda ham bajarilishi kerak. Bunday chekli ayirmali sxemalarga konservativ sxemalar deyiladi. Konservativ sxemalar yechimini fizik nuqtai-nazardan to'g'ri olish imkoniyatini beradi. Shuning uchun, chekli ayirmali sxemalarning konservativlik sharti masalalar yechishda boshqa shartlar qatori tekshirilishi kerak.

Hisoblash usullariga qo'yiladigan talablarning ikkinchi guruhini diskret modelni kompyuterda o'tkazish imkoniyatini tashkil qiladi. Hisoblash usullari shunday algoritmga olib kelishi kerakki, kompyuterning xotira qurilmasi ular uchun yetarli bo'lishi va hisob-kitob vaqti iloji boricha kam bo'lishi lozim. Hisoblash algoritmlari yetarli samaradorlikka ega bo'lishi uchun algoritmdagi arifmetik va mantiqiy amallar soni iloji boricha kam bo'lib, xotira qurilmasida kam hajmi egallashi kerak.

**Masalalarni matematik qurilishi:**

**Misol 1.** Umumiy ko'rinishda berilgan differensial tenglama aniq yechimi ning jadvali ushbu chekli ayirmali sxema yechimi bilan almashiriladi. Unda xatolik sifatida miqdor olinadi va u normada baholanadi.

**Misol 2.** Agar bo'lsa konus hajmi qanday absalut va nisbiy xatoliklar bilan hisoblanishini aniqlang.

Yechish. Ma'lumki, ekanligi uchun limit absalyut va nisbiy xatoliklar formulasiga asosan.

**Misol 3.** To'g'ri to'rtburchakning uzini 0,1 limit absalyut xatolik bilan hisoblash uchun uning tomonlarini qanday limit absalut xatolik bilan hisoblash zarur?

Yechish. Ravshanki, Xatoliklar nazariyasining teskari masalasi formulalaridan topamiz:

**Misol 1.**

**Masalalarni Python dasturlash muhitidagi yechimi**

**Misol 1.**

Agar bo'lsa kami bilan, agar bo'lsa ko'pi bilan taqribiy son olinadi. Masalan, uchun, kami bilan, ko'pi bilan olinmoqda.

**Dastur:**

```
import math
A = math.pow(3, 1/3)
```

**Masalalarni Python dasturlash muhitidagi yechimi**

**Misol 1.**

Agar bo'lsa kami bilan, agar bo'lsa ko'pi bilan taqribiy son olinadi. Masalan, uchun, kami bilan, ko'pi bilan olinmoqda.

**Dastur:**

```
import math
A = math.pow(3, 1/3)
a = 1.7321
Delta_a = 0.0001
Sigma_a = 0.00006
print("1-misol")
print(f"A = √3 = {A:.6f}")
print(f"a = {a}")
print(f"Absolyut xatolik (Δa) = {Delta_a}")
print(f"Nisbiy xatolik (σa) = {Sigma_a}")
```

**Natija:**

```
1-misol:
A = √3 ≈ 1.442250
a = 1.7321
Absolyut xatolik (Δa) = 0.0001
Nisbiy xatolik (σa) = 6e-05
```

**Dastur oynasi:**

```
1 import math
2 A = math.pow(3, 1/3)
3 a = 1.7321
4 Delta_a = 0.0001
5 Sigma_a = 0.00006
6
```

- 1-§. XATOLIKLAR NAZARIYASI
- 2-§. ALGEBRANING SONLI USULLARI
- 3-§. CHATS TAQRIBIY YECHISH
- 4-§. CHIZIQSIZ TENGLAMALARNI TAQRIBIY YECHISH
- 5-§. CHIZIQSIZ TENGLAMALAR SISTEMASINI TAQRIBIY YECHISH
- 6-§. MATSITSANING XOS SON VA XOS VEKTORLARI TOPISH
- 7-§. FUNKSIYALARNI YAQINLASHTIRISH MASALASI
- 8-§. NYUTON INTERPOLYASION FORMULASI
- 9-§. FUNKSIYANI INTERPOLYATSİYALASH AYRIM METODLARI

Nisbiy xatolik ( $\sigma$ ) = 6e-05

Dastur oynasi:

```

1 import math
2 A = math.pow(3, 1/3)
3 a = 1.7321
4 Delta_a = 0.0001
5 Sigma_a = 0.00006
6
7 print("1-misol:")
8 print(f"A = √3 ≈ {A:.6f}")
9 print(f"a = {a}")
10 print(f"Absolyut xatolik (Δa) = {Delta_a}")
11 print(f"Nisbiy xatolik (σ) = {Sigma_a}")
12
    
```

1.2.1-rasm.Dastur kodi


Natija:

```

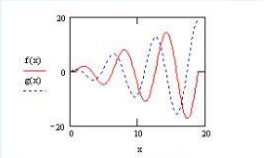
1-misol:
A = √3 ≈ 1.442250
a = 1.7321
Absolyut xatolik (Δa) = 0.0001
Nisbiy xatolik (σ) = 6e-05
    
```

1.2.2-rasm.Dastur natijasi

Mathcad da egri chiziqlar grafiklarini chizish



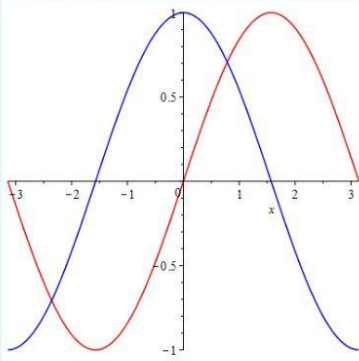
- 1-§. XATOLIKLAR NAZARIYASI
- 2-§. ALGEBRANING SONLI USULLARI
- 3-§. CHATS TAQRIBIY YECHISH
- 4-§. CHIZIQSIZ TENGLAMALARNI TAQRIBIY YECHISH
- 5-§. CHIZIQSIZ TENGLAMALAR SISTEMASINI TAQRIBIY YECHISH
- 6-§. MATSITSANING XOS SON VA XOS VEKTORLARI TOPISH
- 7-§. FUNKSIYALARNI YAQINLASHTIRISH MASALASI
- 8-§. NYUTON INTERPOLYASION FORMULASI
- 9-§. FUNKSIYANI INTERPOLYATSİYALASH AYRIM METODLARI



1.2.3-rasm. Mathcaddagi yechim



Maple da egri chiziqlar grafiklarini chizish


```
plot([sin(x),cos(x), x = -3.14 .. 3.14,[red',blue']);
```



1.2.4-rasm.Maple dagi yechim

Individual topshiriqlar:

1. Funksiya, nuqtaning(argument) koordinatalari, argumentning absolyut yoki nisbiy xatoligi berilgan. Funksiya (argument) xatoligi topilsin:   deb olinishi kerak).

Izoh 1. n=1 uchun .

hisus.uz/progress/study/0

**1-§. XATOLIKLAR NAZARIYASI**

**2-§. ALGEBRANING SONLI USULLARI**

**3-§. CHATS TAQRIBIY YECHISH**

**4-§. CHIZIQSIZ TENGLAMALARNI TAQRIBIY YECHISH**

**5-§. CHIZIQSIZ TENGLAMALAR SISTEMASINI TAQRIBIY YECHISH**

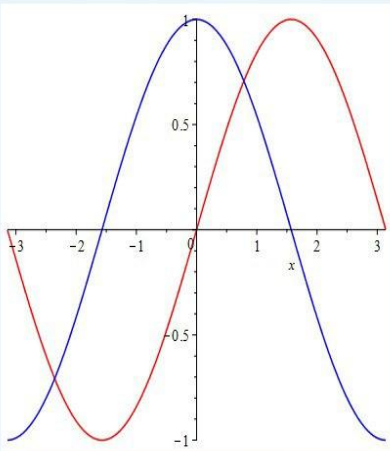
**6-§. MATSITANING XOS SON VA XOS VEKTORLARI TOPISH**

**7-§. FUNKSIYALARNI YAQINLASHTIRISH MASALASI**

**8-§. NYUTON INTERPOLYASION FORMULASI**

**9-§. FUNKSIYANI INTERPOLYATSIYALASHI AYRIM METODLARI**

**Extracted Images:**

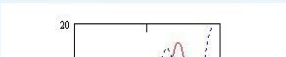


```

1 import math
2 A = math.pow(3, 1/3)
3 a = 1.7321
4 Delta_a = 0.0001
5 Sigma_a = 0.00006
6
7 print("1-misol:")
8 print(f"A =  $\sqrt[3]{3} \approx \{A:.6f\}$ ")
9 print(f"a = {a}")
10 print(f"Absolyut xatolik ( $\Delta a$ ) = {Delta_a}")
11 print(f"Nisbiy xatolik ( $\sigma a$ ) = {Sigma_a}")
12

```

1-misol:  
 $A = \sqrt[3]{3} \approx 1.442250$   
 $a = 1.7321$   
 Absolyut xatolik ( $\Delta a$ ) = 0.0001  
 Nisbiy xatolik ( $\sigma a$ ) = 6e-05



2.9-2.10-2.11-2.12-2.13-2.14- Fig. Topics page

7) The Hisobly platform, which includes theoretical information on the above topics and mathematical construction of problems based on theoretical information, description of the algorithm through block diagrams, solutions and graphs in the mathematical packages Maple and MathCad, program code and results in the Python programming language, video tutorials in Uzbek, English, and Russian, doc format and presentation views of the topic, has brought several conveniences to students. In particular, students can find answers to questions that arise in independent situations outside of class through the platform.

1-§. XATOLIKLAR NAZARIYASI

2-§. ALGEBRANING SONLI USULLARI

3-§. CHATS TAQRIBIY YECHISH

4-§. CHIZIQSIZ TENGLAMALARNI TAQRIBIY YECHISH

5-§. CHIZIQSIZ TENGLAMALAR SISTEMASINI TAQRIBIY YECHISH

6-§. MATSITSANING XOS SON VA XOS VEKTORLARI TOPISH

7-§. FUNKSIYALARNI YAQINLASHTIRISH MASALASI

8-§. NYUTON INTERPOLYASION FORMULASI

Extracted Images:

[Mavzu faylini onlain ko'rish](#)

[Mavzu faylini yuklab oling](#)

Video

- [Videoni ko'rish](#)
- [Videoni ko'rish](#)
- [Videoni ko'rish](#)

Slide

- [undefined](#)
- [undefined](#)

Test

- [undefined](#)

Exercises(Mashqlar)

1- mashq

Q1:

Funksiya qiymatining absolyut xatoligi topilsin (Jadvaldagi 1- misol).

N <sub>o</sub>	Funksiya	1- o'zgaruvchi	1- o'zgaruvchi	1- o'zgaruvchi	1- o'zgaruvchi
1	$u = ab/\sqrt{c}$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005
2	$u = ab/c^2$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005

---

1-§. XATOLIKLAR NAZARIYASI

2-§. ALGEBRANING SONLI USULLARI

3-§. CHATS TAQRIBIY YECHISH

4-§. CHIZIQSIZ TENGLAMALARNI TAQRIBIY YECHISH

5-§. CHIZIQSIZ TENGLAMALAR SISTEMASINI TAQRIBIY YECHISH

6-§. MATSITSANING XOS SON VA XOS VEKTORLARI TOPISH

7-§. FUNKSIYALARNI YAQINLASHTIRISH MASALASI

8-§. NYUTON

Q1:

Funksiya qiymatining absolyut xatoligi topilsin (Jadvaldagi 1- misol).

N <sub>o</sub>	Funksiya	1- o'zgaruvchi	1- o'zgaruvchi	1- o'zgaruvchi	1- o'zgaruvchi
1	$u = ab/\sqrt{c}$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005
2	$u = ab/c^2$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005

Extracted Images:

N <sub>o</sub>	Funksiya	1- o'zgaruvchi	1- o'zgaruvchi	1- o'zgaruvchi	1- o'zgaruvchi
1	$u = ab/\sqrt{c}$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005
2	$u = ab/c^2$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005

Math Python Mathcad Maple flowgorithm

Q2:

Funksiya qiymatining nisbiy xatoligi topilsin (Jadvaldagi 1- misol).

N <sub>o</sub>	Funksiya	1- o'zgaruvchi	1- o'zgaruvchi	1- o'zgaruvchi	1- o'zgaruvchi
1	$u = ab/\sqrt{c}$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005
2	$u = ab/c^2$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005

2.15-2.16- Fig. Assignments page

8) We will begin the process of uploading our completed tasks to the platform based on the theoretical and practical skills above.

Nö	Funksiya	1-o'zgaruvchi	1-o'zgaruvchi	1-o'zgaruvchi	1-o'zgaruvchi
1	$u = ab/\sqrt[3]{c}$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005
2	$u = ab/c^2$	3.85 ±0.01	5.86 ±0.02	4.82 ±0.003	0.82 ±0.005

Math

Python

Mathcad

Maple

flowgorithm

2.17- Fig. Individual tasks window

We will complete the assignments in these sections using Math (mathematically), Python (programming language), Mathcad (mathematical package), Maple (mathematical package) and Flowgorithm (block diagrams) and upload them to the indicated location. Only the numerical part.

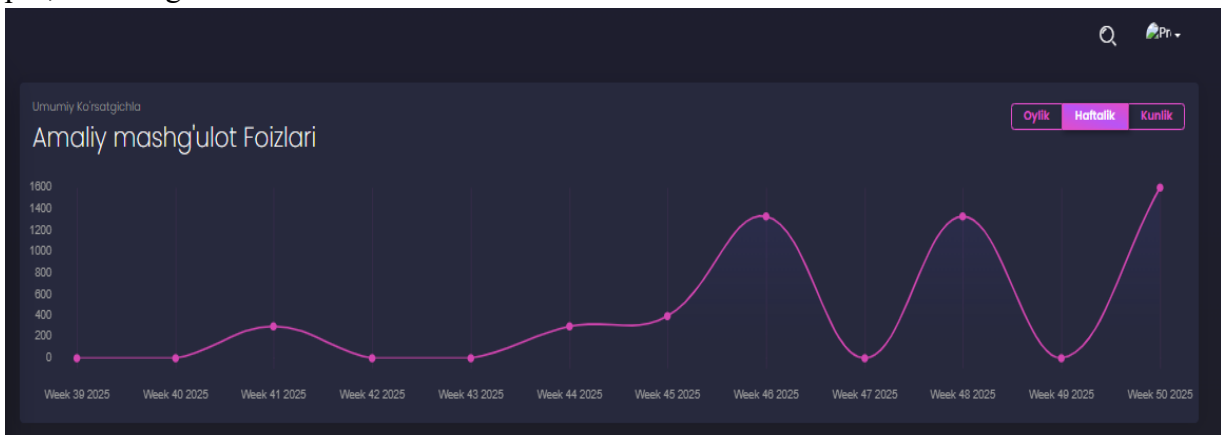
**Upload Answer Files(Javoblar faylini yuklash):**  No file chosen

Hali hech qanday fayl yuklanmadi.

Javoblarni yuboring

2.18- Fig. File upload window

9) This is where we upload the file of our completed tasks. The file can be uploaded in doc, pdf, and image formats.



2.19- Fig. Practical training schedule

10) After we upload, the tasks we submit will increase by a percentage, giving a result like the graph above.

11) This picture also reflects our results for the last 5 days.



2.20- Fig. Average percentage for the last 5 days

While studying lectures and completing assignments for practical classes, students will be able to use the glossary and electronic manuals collected for the course.

It is clear that when mastering the course, students will be able to independently search for knowledge and determine the level of knowledge they have acquired, while the teacher, in turn, will be able to monitor the level of students' mastery of the topics and supplement the learning material at the right time.

When organizing distance learning for students, it is important to use the capabilities of computer technology and its programs, to help students master the course using computer tools, and to determine their level of knowledge.

To organize the "Computational Methods" course taught in mathematics departments of higher education institutions through distance learning, it is necessary to first pay attention to the student's learning ability and interest in the subject.

After mastering all the topics, the student takes the final test. The final test determines the level of mastery of the course "Methods of Calculation". Students who complete the course well and excellently will be awarded an electronic certificate to further increase their motivation and encourage them.

We have developed methodological guidelines for teachers and students on how to use the software and methodological complex to monitor the course and students using it.

## CONCLUSION

In conclusion, it is advisable to use all the tools of the software and methodological complex to determine the level of independent learning and mastery of students.

Therefore, we believe that if students of mathematics majors in higher education institutions are taught not only the "Computational Methods" course, but also other specialist subjects through a software-methodological complex, they will be given the opportunity to acquire independent knowledge and their learning efficiency will increase.



**REFERENCES:**

1. G.Y.Soliyeva, M.Y. Eshnazarova. Hisoblash usullari. (Darslik), NamDPI - Namangan, «Mashrab» 2025. 304-b.
2. G.Y.Soliyeva “O‘zbekiston va hindiston ta’limida "hisoblash usullari" fanida lagranj interpolyatsiya ko‘phadini o‘qitish metodikasi” maqola, International Journal of Science and Technology ISSN 3030-3443 Volume 2, Issue 03, March 2025.
3. G.Y.Soliyeva. “Xorijiy va mahalliy tajribada mustaqil o‘rganishni tashkil etishda dasturiy-metodik ta’minotdan foydalanish va talabalarning mustaqil ishlash kompetensiyasini rivojlantirish metodikasini takomillashtirish” tezisi, Respublika konferensiya: “Ilm-fan, texnologiya va ta’limda yangi paradigmalar” mavzusidagi Respublika ilmiy-amaliy konferensiyasi, 2025-yil, 15-18-betlar.
4. G.Y.Soliyeva. “Improving the methodology for developing students' independent work competence” maqolasi, Xalqaro OAK : “SCIENCE AND INNOVATION” International Scientific Journal Volume 4 Issue 10 October 2025 ISSN: 2181-3337 | scientists.uz, 95-101 – betlar.
5. G.Y.Soliyeva. “Dasturiy - metodik majmualardan foydalanib hisoblash usullarini o‘qitish metodlarini tizimli tanlash” maqolasi, Mahalliy OAK: Namangan davlat universiteti Ilmiy axborotnomasi, ISSN:2181-0427, ISSN:2181-1458, 2025-yil, 609-614-betlar.
6. G.Y.Soliyeva, “Ta’lim tizimida dasturiy – metodik majmua yaratish pedagogik muammo sifatida” maqolasi, Mahalliy OAK: NamDPI "Ta'lim va taraqqiyot", 4-son, ISSN:2992-9008; UDK:37, 2025-yil, 389-398-betlar.
7. G.Y.Soliyeva, “Oliy ta’lim tizimida talabalarning hisoblash usullari kursi o‘qitishning metodik tizimi” tezisi, Respublika konferensiya: “Nazariy va amaliy fanlardagi ustuvor islohotlar va zamonaviy ta’limning innovatsion yo‘nalishlari”, Vol.2, 125-132- betlar.
8. G.Y.Soliyeva, “Dasturiy-metodik majmualar orqali talabalarda hisoblash usullari kursini mustaqil o‘zlashtirish metodikasini takomillashtirish” tezisi, Respublika konferensiya: “Yosh matematiklarning yangi teoremlari” respublika ilmiy-amaliy anjumani” respublika ilmiy-amaliy anjuman, 2025-yil, 157-158-betlar.
9. G.Y.Soliyeva, “Mustaqil ta’lim faoliyatining zamonaviy pedagogika nuqtai nazaridan tahlili va uning ahamiyati”, Qo‘qon davlat pedagogika instituti ilmiy xabarlar, ISSN:3030-3958, 2025-yil, 1294-1302-betlar.
10. G.Y.Soliyeva, “The Role and significance of software-methodical complexes in increasing educational efficiency”, “Scientific review of the problems and prospects of modern science and education”, 2025-yil, 37-41-betlar.
11. G.Y.Soliyeva, “Hisoblash matematikasining qisqacha tarixi, predmeti va metodi”, “Pedagogika ta'lim va tarbiya transformatsiyasida fundamental, amaliy va innovatsion tadqiqotlarning konseptual asoslari” respublika ilmiy-amaliy anjuman, 2025-yil, 269-276-betlar.
12. G.Y.Soliyeva, “Dasturiy-metodik majmuani ishlab chiqish bosqichlari hamda pedagogik talablar”, Maktabgacha va maktab ta’limi ilmiy-metodik jurnal, 2026-yil.
13. G.Y.Soliyeva, “Dasturiy metodik majmualar orqali talabalarda Hisoblash usullari fanini mustaqil o‘zlashtirish metodikasini takomillashtirish”, O‘zR Adliya vazirligi huzuridagi



---

intellektual mulk agentligi elektron hisoblash mashinalari uchun yaratilgan dasturning rasmiy ro'yxatdan o'tkazilganligi to'g'risidagi guvohnoma DGU 56501 18.11.2025.

14. G.Y.Soliyeva, "Hisoblash usullari fani bo'yicha o'quv kontenti", "Yangi davr ilm-fani: inson uchun innovatsion g'oya va yechimlar" mavzusidagi II Respublika ilmiy-amaliy konferensiya.
15. G.Y.Soliyeva, "Hisobly platformasida ishlash bo'yicha metodik tavsiyalar" nomli uslubiy ko'rsatmasi, Namdu o'quv-uslubiy kengashi yig'ilishi 4-bayonnomasidan ko'chirmasi.
16. G.Y.Soliyeva, "Oliy ta'lim tizimida hisoblash usullari fanida chiziqli algebraik tenglamalar sistemasi usulini o'qitish metodikasini takomillashtirish", Namangan davlat universiteti Ilmiy axborotnomasi, ISSN:2181-0427, ISSN:2181-1458, 3-son, 2025-yil, 1059-1061-betlar.

