

THE REPUBLIC OF UZBEKISTAN
MINISTRY OF HIGHER AND SECONDARY SPECIALIZED
EDUCATION
ANDIJAN MACHINE - BUILDING INSTITUTE

To get the list is:

688

2022-year "26" 08



"confirmed"

the institute

M. U. Turdialiev

2022-year "26" 08

COMPUTING MACHINES, SYSTEMS AND NETWORKS
SCIENCE PROGRAM

Knowledge area: 300000 – Production and technical sphere
education: 310000 – Engineering work
the direction of Education: 5312600 - Mechatronics and robotics

Andijan – 2022

In the year 2022 of the institute of Andijan machine building institute “____” _____ in__ dated in the council of “computing machines, systems and networks” science program is approved.

Andijan has been developed at the institute of engineering science program.

The developers:

N. Kabulov - Andijan machine building institute “Automation of Mechanical Engineering Production” associate professor, (PhD)

Sh. Mamatbekov - Andijan machine building institute asisstent of.department “Automation of Mechanical Engineering Production”.

Oqilov A. - at Andijan machine building institute asisstent of department “Automation of Mechanical Engineering Production”.

Reviewers:

M. Makhkamov-associate professor of the Department of “Information Technologies” of Andijan State University, t.f.n.

I.Atabaev-head of the Metrology Department of ANDIJONBIOCHEMISTRY JSC.

Educational and methodical council of science program recommended in the review of andijan institute of engineering (20__year“____” _____ in “__” the record number).

The chairman of the council: _____

I. professional education, the ministry of science and higher education's role in actual

Computing machines, systems and networks science - "mechatronics and robotics" education and the direction of him besides the bachelor of education students in the areas which are designed for industrial enterprises used in the production process using computing machines, systems and networks, their classification, structure, construction methods, history of science and of the development of the trend, the concentration of our republic istikbol of socio-economic reform issues such as the impact on the prospects of the production process at the results represents.

In the whole wide world in the next year, the new network is the computer science and technology is developing a wide range of mechatronics. Knowledge in the field of mechanics and mechatronics, as well as the achievements of modern computer technology in electronics and electrical engineering based on fandır. Computer systemsi new quality indicators is considered the fundamental basis of modern machines and units which is able to.

II. The purpose and function of educational sciences

The goal is to read science - students of modern computer systems and network I work to teach the principles of. The architecture of the computer system, a network of topologiya and protocols for the formation of skills to work with. To achieve this goal, we will consider the following issues:

- Students in the architecture of the computer system to become familiar with;
- Students structure computer networks familiarization with;
- Students with a modern and exchange of information methods to teach;
- Students network management methods to teach;
- Kontroller students using the computer to teach the methods of system management;
- Building management systems to teach students in creative thinking.

III. The main theoretical part (lectures sessions)

1-module. Architecture of computing machines and systems

1-theme. The history and development of computer systems science trends Functions and types of structural information and computing systems organization.

2-theme. Architecture of computing systems

The main blocks and their functions are indications of the computer. Microprocessor architecture, types and their basic blocks, functions, indications are.

3-theme. And functional characteristics of the external device.

Microprocessor the discharge of local and system interface. Cache memory functions. Computing system with other types of connection options.

4-theme. Memory of the device

The main memory device and its physical structure. Static and dynamic operational memory. File storage methods. Analog and digital memory device.

5-theme. Information and computing systems.

Types and functions of information systems and computing. Organization structural information and computing systems. Mechanics many and many a processor of the computing system.

6-theme. Assessment of the productivity of the computing system.

Takt frequency on the productivity of the assessment. Peak productivity and real. Flops and MIPS units

2-module. Transmission media information

7-theme. Cable transmission media of information.

The twisted pair on the basis of cars. Koaksial cars. Fiberglass cars.

8-theme. Wireless information transmission media.

Wireless communication. Configure the technological pointers of communication is either. Coding information.

3-module. The basis for the construction of the network.

9-theme. The main types of computer networks

10-theme. Local computing networks white topology.

Ethernet, Star and Ring topologies.

11-theme. Standard network protocols. ISO / OSI model

12-theme. Methods for managing information exchange

13-theme. Network software

Function of operating systems. Network operating systems.

14-theme. Architecture of network operating systems.

One-rank and server network operating systems. Architecture of network operating systems.

4-module. Computer networks.

15-theme. Local networks

Features of the local network. Local network in a detachable fan

16-theme. Ethernet networks.

Switching Ethernet networks. Fast working versions of the Ethernet network.
Virtual networks. Wireless local area networks.

17-theme. Network devices.

Token-Ring network

18-theme. Functions of network devices

19-theme. Network equipment.

20-theme. Global network.

Primary networks. Frame-Relay technology. ATM technology.

21-theme. MPLS technology.

IP global Networks. Remote possession.

5-module. Network protocols

Module 5. Network protocols

22-subject. TCP / IP protocols steki.

Addressing in TCP/IP networks. Inter-network communication protocols.

23-theme. TCP and FTP transport step protocols.

Routing protocols. Auxiliary protocols and TCP / IP stack tools

24-theme. Network services.

IV. Guidelines and recommendations on practical lessons

The aim of practical training is to provide their assessment and teaching of computer systems and networks. Practical sessions are held in computer labs on science. Internet, the computer must be connected to the network.

Topics of practical classes

1. The main blocks of the computer are their functions and pointers.
2. Possibilities of connecting with other types of computing systems.
3. Storage methods of files. Analog and digital memory devices.
4. Multi-machine and multi-processor computing systems.
5. Peak and real productivity. MIPS and Flops units.
6. Twisted pair-based cables. Coaxial cables. Fiberglass cables.
7. Wireless communication channels. Adaptation of technological pointers of communication paths.
8. Tire, Star and Ring topologies.
9. Function of operating systems. Network operating systems.
10. Features of the local network. Local network in a detachable fan.
11. Fast working versions of the Ethernet network.
12. Token-Ring network.
13. Primary networks. Frame-Relay technology.
14. IP global Networks. Remote possession.
15. Addressing in TCP/IP networks. Inter-network communication protocols.
16. Auxiliary protocols and TCP/IP stack tools.
17. Web service and FTP, Telnet protocols.
18. Network management system and SNMP protocol.

V. laboratory sessions

The laboratory sessions is to provide students the aim of their teaching and assessment of computer systems and networks. Practical sessions are held in computer labs on science. Internet, the computer must be connected to the network.

Laboratory exercises topics

1. Primary networks. Frame-relay technology.
2. IP global Networks. Remote possession
3. TCP/IP networks Inter-sectoral communication protocols.
4. Ethernet protocols and TCP/IP stack tools.
5. Web service and FTP, Telnet protocols.
6. The network of other INR the oldest and largest and SNMP protocol.

VI. Independent study and independent work

“Computing machines, systems and networks” on the subject of the student's independent learning is a part of the process of learning science. Education the results of the independent assessment will be evaluated on the basis of the system. Complete home tasks, the additional textbooks and new knowledge from the literature, independent study, and find them in the search of the necessary information, qualification demands by using the internet to conduct research and collect data in the body of the lesson students will enhance their knowledge you will develop the ability of independent and creative thinking.

In order to develop the skills of independent thinking of students in the discipline “Computing machines, systems and networks”, tasks are given as follows:

1. The topics concern the principle of operation of computing machines, systems and networks, the functions they perform.
2. On the given topics, the necessary materials are searched on the Internet. Based on the materials found, the subject is studied and condensed.
3. Abstracts and presentations are prepared on the topic under study.
4. Topics are given to students by order number in the journal. Subject names are used as keywords to complete the first assignment. Based on the ability to know languages, the student performs search activities using the GOOGLE internet resource.

For the second assignment, it is performed under the help and supervision of professors. It uses projects and programs prepared in practical and laboratory classes as a model

The subject of independent work.

1. Architecture of computing systems
2. The main blocks and their functions are indications of the computer.
3. Microprocessor architecture, types and their basic blocks, functions.
4. And functional characteristics of the external device.
5. Microprocessor the discharge of local and system interface.
6. Computing system with other types of connection options.
7. The main memory device and its physical structure.
8. Static and dynamic operational memory. File storage methods.
9. Analog and digital memory device.
10. Types and functions of information systems and computing.
11. Organization structural information and computing systems.
12. Mechanical many and many a processor of the computing system.
13. Assessment of the productivity of the computing system.

14. Takt frequency on the productivity of the assessment.
15. Peak productivity and real. Flops and MIPS units
16. Wired information transmission fans.
17. Twisted pair-based cables. Coaxial cables. Fiberglass cables.
18. Wireless communication channels.
19. Adaptation of technological pointers of communication paths.
20. Coding information.
21. The main types of computer networks.
22. Local computing network topology.

VII. The course work (project)

“Computing machines, systems and networks” on the subject of the course work (project) is not envisaged in the training plan.

VIII. Basic and additional literature and information sources

Basic literature

1. A. A. Qaxxarov, Yu.Sh. Avazov, U.A Ruziyev. Komryuter tizimlari va tarmoqlari. –T.: “Fan va texnologiya”, 2019. 456 b
2. M.Aripov, B. Begalov, M. Mamarajabov. Axborot kommunikatsion texnologiyalari va tizimlar. Training guide -T:”Noshir”, 2009
3. Олифер В.Г., Олифер Н.А. Компьютерные сети. Принципы, технологии, протоколы. Учебник. -3-е издание. СПб. Питер. 2006г.
4. Бройдо В.Л. Вычислительные системы, сети и телекоммуникации. СПб.: Питер. 2003.
5. Бройдо В.Л. Архитектура ЭВМ и вычислительных систем. Учебник 2 е издание. М.: Форум. 2008.
6. Yusupbekov N.R., Muxitdinov D.P., Bazarov M.B. Elektron hisoblash mashinalarini kimyo texnologiyasida qoTlash. -T.:Sciene, 2010. -492 b.

Additional literature

1. Mirziyoev SH.M. Buyuk kelajagimizni mard va olijanob xalqimiz bilan birga quramiz. - T.: -Uzbekiston NMIU, 2017. -488 b.
2. Uzbekiston Respublikasini yanada rivojlantirish buyicha Harakatlar strategiyasi tugrisida. -T.: 2017 yil 7 fevral, PF-4947-son farmoni.
3. Karl A Astrom, Bjorn Wittenmark. Computer-Controlled Systems: Theory and Design, Third Edition. -USA: Dover Publications, 2011 576 p
4. Fritz Klocke. Modeling and Planning of Manufacturing Processes. – Germany Springer, 2016. -658p.

Of the internet site

1. www.ru.wikipedia.org.
2. <http://www.intuit.ru/department/informatics/intinfo/>
3. <http://www.pay to st.h.16.ru/education/informatik/eu.intro/il.html>
4. <http://www.junior.ru/students/miroshnikov/pan kod.htm>
5. <http://www.dstu.edu.ru/iformatics/intdss/index.html>
6. <http://www.tula.net/tgpu/new/New/informatics/g1.htm>
7. <http://www.zyonet.uz>

