TOPICS FOR SELF-STUDY

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To organize an independent students' education is focused on developing self-mastery skills of students the necessary knowledge. Independent work can be carried out in the form of note-taking or preparing source projects based on independent study of the recommended first-hand.

THE CONTENT AND SCOPE SELF EDUCATION STUDENTS

Working section of the curriculum	Tasks and recommendations for self-study	Deadline	volume (in hours)
1. The subject of Informatics and information technology in contemporary context. The role of Presidents decrees in development of Informatics and information technology. Task of Informatics and information technology as science and its role in business management. The value of Informatics and information technology in the formation of modern economic thinking, cognition problems of socio-economic development of Uzbekistan.	preparation of Abstracts	seminar lessons on this subject	4
2. Basics of information technology and its role in development. Information and informatization. Counting of information. Means of collecting, saving, transmissing and prosessing information	project	- V -	2
3. History of computer development. Architecture of Fon Neyman. Main elements of computer system. Technical basement of computers. Main and periphrical elements of computers (prosessor, buses, input-output elements, memories). Processing of information in computer.	presentation	- V -	2
4. Data writing in computer, codification (true, invert and other codes). Grafical and text formats of data. Arifmetic and logical basements of Computers. Different data conversion systems and working with them	debate	- V -	4
5. Possibilities of Windows, Linux, Unix and other operation systems. Working with files and catalogues.	project	- V -	4
6. Different types of algoritms. Linear, logical and other types of algoritms. Methods of producing algoritms: bloks, diagrams, psevdo codes and programs.	synopsis	- V -	2
7. Problem oriented programming languages.	debate	- V -	2

Structure of programming language. Basic information about programming languages. Translators and interpretators. Main operators of programming languages. Types of programming languages elements: whole, logical, symbol and characters			
8. Logical elements, predikats and logical functions. Logical operations. Geometric and fizikal issues of logical operations	presentation	- V -	4
9. Programming of cycle operators. Logical and unlogical input operators. Different types of cycle operators. Sum and multiply programs. Organizing and management of complex programs	project	- V -	4
10. One dimension and two dimension massives. Problem of information filters. Using of subprograms (functions). Working with formal and informal parameters.	project	- V -	4
11. Working with files. Working with text, graphic, audio and video files. Operations with different types of files	presentation	- V -	4
12. Possibilities of the display adapter. Using with graphical module. Coordinates, frames, colors, background colors and objects. Points, lines, circles.	presentation	- V -	4
13. Main principles of object oriented languages. Classes, objects and different manipulation mechanisms. Standard libraries, lines, containers, files, classes etc. File flows and operations with them	presentation	- V -	2
14. Structure of the language. Directives of processor and main function. Main types of identificators and variables. Arifmetical, logical and special operations. Standard mathematical functions. Using algorithmic language C++ for input-output operations, for management of the program, specifications, modifications, standard libraries and content files. Structure of linear program	project	- V -	2
15. Notion of mathematic model. Stages and methods of constructing mathematic models. Statistical analyses of mathematic modeling. Adequacy of the mathematic models	presentation	- V -	4
16. Moving and animation programs. Input sorting algoritms. Rekursiv algoritms and its main types	project	- V -	2
17. Information systems. Main components of information systems. Stages of development information systems. Types of information systems	presentation	- V -	2
18. Different types of information technology.	debate	- V -	2

Main elements and explanations. Mutual relationships of information technology and information systems			
19. Different types of information technology. Main elements and explanations. Mutual relationships of information technology and information systems. Main components of information technology	project	- V -	2
20. Management information technologies. Information technologies in the economy. Office automation. Expert systems. Executive information technologies	presentation	- V -	2
21. Different types of network technologies. Organization of networks	Debate	- V -	2
22. Technology of working with data and information in the computer network	Debate	- V -	2
23. Organization of databases in network and working effectively with them	presentation	- V -	2
24. Problems of formation of the network technologies in Uzbekistan	project	- V -	2
25. The concept of information security. Main elements of information security. Why providing information security is very important?	debate	- V -	2
26. Electronic digital passport	Debate	- V -	2
27. Computer viruses. Types of viruses. Classes of viruses. Definition of viruses. Antivirus programs. Security politics. Methods of providing computer security	presentation	- V -	2
28. Stenographical and cryptographically methods of providing security	presentation	- V -	2
29. Utilities of operations systems for providing information and network security	debate	- V -	2
30. Web-design and browsers. Web-pages and working with them. Web-servers	project	- V -	2
31. Navigation in internet and information seeking systems. Google, Bing, Yandex, Copernic etc	presentation	- V -	2
32. Main models of information in databases. Relational. Network and hierarchical models of databases. Putting information into databases. Management of databases and methods. Sequential Query Language (SQL) for managing of databases.	project	- V -	2