Faculty of International Economics and Administration
Department: Informatics
Professional area: Informatics and Computer Studies
Major: WEB Design
Educational – and - qualification Degree: Master

COURSE DESCRIPTION

1. Course unit title: **System Architecture of Computer Networks**
2. Course unit code: **INF 3036**
3. Type of course unit: compulsory
4. Level of course unit: Master
5. Year of study: second
6. Semester: third
7. Number of ECTS credits allocated: 6
8. Name of lecturer: Prof. D.Sc. Nicolay Lyutov (in a team with Prof. D.Sc. Todor Stoilov)
9. Learning outcomes of the course unit - picked up knowledge, skills, competences (objectives): The course aims at acquiring knowledge and practical skills for working with computer devices and systems. The main components of the computer are studied: processor, input-output devices, operational memory, control devices. The current technological solutions about configuring and establishing computer configurations are studied. The functional capacities of operational systems, their methods of working, main informational problems and way of their solving are discussed.
10. Mode of delivery: face-to-face
11. Prerequisites and co-requisites (knowledge and skills from previous training): The study of the course requires knowledge of working and calculating with binary arithmetic system. The course aims at integrating knowledge about the hardware part of the computer system with the way of working of computer software devices in the necessary ratio.
12. Course contents (annotation): The course aims at presenting the notions, tasks, functions and interactions between the components which make up the structure of a calculating machine. Students are familiarized with a summarized structure of the computer; with the basic technical and functional components – processor, memory, input output devices; with the principles of interaction and working of components without interruption. The course is oriented towards the modern solutions of calculating systems such the local and global networks are. Structures and types of local networks are discussed. The basic functions and tasks to be solved are presented. The opportunities of the network operational systems are studied. The course presents architecture of global networks, tools for their realization, functions to be performed. The issues about the data exchange in computer architectures, local and global networks are studied. Different types of operational systems, the methods for program management of input-output operations, management of real and virtual memory, data management, security of resources in calculation systems are also studied. Special attention is paid to the issues connected with multi-program and multi-task operational systems, synchronization of parallel processes and averting mutual blocking and the virtual machines and recourses. The connection between the machinery and program part of computing tools and systems is emphasized.
13. Recommended or required reading:

Гаджев Н., Г. Димов. Компютърни системе, кн.1, Меридиан 22, София, 2001

- Боянов К., Турлаков, А Симеонов, и др. Компютърни мрежи, Интернет, София, 1998
- Тодорова Т., Компютърни мрежи, Софтпрес, 1999
- Нортън П., Мрежи, Инфодар, София, 1999
- http://fmi.wikidot.com/karh

14. Planned learning activities and teaching methods: lectures (2 hours a week, 15 weeks) study the main topics of the course on the structure of the computer, ways of work of the different components, coordination of the work of the computer parts.
15. Assessment methods and criteria: The examination is written and practical. The written part includes writing about two questions from the questionnaire within an hour. The assessment result from the written test gives 60% from the final result of the student. During the practical part of the examination the students do some work and adjustment of the computer configurations. The practical part gives 40% of the final assessment result.
16. Language of instruction: Bulgarian, English
17. Work placement: practical laboratory work for solving problems on the configuration of computer systems and nets, adjustment of computer periphery work, diagnose and testing of system of work of the computer and its periphery.