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|--|---|----------------|-------------------------|
| Discipline | COMPUTER ARCHITECTURES | code: 30 | winter semester |
| Specialty | Computer Systems and Technologies | | |
| ECTS credits: 7 | Form of assessment: exam | | |
| Lecturer | Ass. Prof. Luchezar Georgiev, PhD Room 405 TB Phone: +359 52 383 628 E-mail: lig@tu-varna.bg | | |
| Department | Computer Science and Engineering | | |
| Faculty | Faculty of Computing and Automation | | |
| Learning objectives: | | | |
| <p>The aim is to unite the knowledge of the students on the hardware and software used in the modern computers, and to show their interaction in the entire computational process. The students are acquainted with concepts such as computer performance and efficiency, which are a direct consequence of the architecture.</p> <p>Parallel architectures and parallelism as the main trends in the development of the modern computers are stressed. Pipeline instruction processing in the modern CPU, processors with a very long instruction word, vector processors, and processors with shared and distributed memory are covered. Features of the memory architectures (internal and external storage) are examined. The communication network types used in parallel computers are given attention, too.</p> | | | |
| CONTENTS: | | | |
| | Training Area | Hours lectures | Hours seminar exercises |
| | Introduction to computer architectures | 2 | 2 |
| | Modern computer architecture features | 3 | 3 |
| | Introduction to parallel processing | 3 | 3 |
| | Pipeline execution of the instructions in the CPU | 4 | 4 |
| | Processors with multiple functional units | 3 | 3 |
| | Vector processors | 3 | 3 |
| | Parallel computers with shared and distributed memory | 4 | 4 |
| | Communication networks | 3 | 3 |
| | Memory architecture of the parallel computers | 3 | 3 |
| | Architecture of the disc subsystem | 2 | 2 |
| | TOTAL: 60 h | 30 | 30 |