Меѓународен Универзитет Визион - International Vision University
Universiteti Ndërkombëtar Vizion - Uluslararası Vizyon Üniversitesi

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SYLLABUS

COURSE NAME	COURSE CODE	SEMESTER	COURSE LOAD	ECTS
COMPUTER ARCHITECTURE	**CEN-1010**	3	150	5

Prerequisite(s)	None

Course Language	Macedonian, Turkish, English
Course Type	Required
Course Level	First Cycle
Course Lecturer	
Course Assistants	
Classroom	
Extra-Curricular Office Hours and Location	

Course Objectives	To create an environment where you can analyze and criticize research articles written on computer architecture in the classroom environment. To be able to develop hypotheses by developing and testing projects. To reach the level of reviewing and examining the relevant literature before the research. Ability to describe and develop a project and turn it into a neat and complete research paper. To be able to present a research work properly in front of a group. To be able to understand the basic problems in computer architecture and to analyze different solutions to these problems. To be able to understand different computer architecture paradigms and gain practice in solutions.
Course Learning Outcomes	Understanding high-level concepts in computer architecture. To be able to explain the main differences of architectural characteristics. Examine pipeline and multiprocessor systems, which are modern design structures. To know new emerging computer architectures and input/output devices and to examine advanced structures of driver/manager devices. Writing a review article/report on advanced computer architectures.
Course Contents	Computer Hardware Components, Von Neuman machine, embedded systems, Benchmarks, SPEC, Amdal law, SM, RC, DC systems, Microprogramming, Instruction Set, Parallel Architectures, Memory, x86 and ARM recording media. Virtual Memory, Swapping, Paging, TLB, Pentium and ARM, External Memory, Flash Memory, Multiprocessor systems, GPU, Superscalarity, Parallelism types, network topologies.

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week	Subjects	Related Preparation
1	Introduction to Computer Architecture	Related Chapters of Course Sources
2	Von Neuman machine,	Related Chapters of Course Sources
3	Microprogramming, Instruction Set,	Related Chapters of Course Sources
4	Parallel Architectures	Related Chapters of Course Sources
5	Microprocessors, RISC and CISC.	Related Chapters of Course Sources
6	x86 and ARM save media	Related Chapters of Course Sources
7	Midterm	Related Chapters of Course Sources
8	Discovery memories and work	Related Chapters of Course Sources
9	Virtual Memory,	Related Chapters of Course Sources
10	Swapping, Paging	Related Chapters of Course Sources
11	Memories and their types, external memory	Related Chapters of Course Sources
12	Optical memory media	Related Chapters of Course Sources
13	Multiprogramming	Related Chapters of Course Sources
14	Multiprocessor systems network topologies	Related Chapters of Course Sources
15	Final Exam	Related Chapters of Course Sources

ECTS / WORKLOAD TABLE

Presentation / Seminar			
Hours for off-the-classroom study (Pre-study, practice)	14	3	42
Midterm Exam	1	12	12
Final examination	1	14	14
Total Work Load			
ECTS	**5**		

GENERAL PRINCIPLE RELATED WITH COURSE

Dear Students,
In order to be included in the lesson, learn the lesson fully and achieve the success you deserve, you must come to each lesson prepared by reading the sections related to the subjects to be covered from the basic and supplementary textbooks. We expect you to meticulously comply with the lesson hours, not to interrupt the lessons unless it is absolutely necessary, to participate actively in the lesson, to communicate fully with your teacher and classmates, and to be active by participating in the discussions in the class. Unethical behaviors that may occur both in classes and in exams will be acted upon within the framework of the relevant regulation. Attendance will be taken at the time your teacher requests, at the beginning, middle or end of each lesson. Students who attend all classes during the semester will be given a 15-point attendance grade in addition to the exam grade.

SOURCES

COMPULSORY LITERATURE		
No	**Name of the book**	**Author's Name, Publishing house, Publication Year**
1	Bilgisayar Mimarisi,	John L. Henesi (2010), Prosvetno Delo
2	Bilgisayar Mimarisi ve Organizasyonu	Cengiz Uğurkaya, Osman, OSMAN Ailefendioğlu (2007), papatya bilim
3	Computer Organisation and Architecture	William Stallings(2015), Pearson

ADDITIONAL LITERATURE		
No	**Name of the book**	**Author's Name, Publishing house, Publication Year**
1	Structured Computer Organisation	Andrew S. Tanenabum (2012), Pearson
2	Computer Architecture: A Quatitative Approach	John L. Henesy, David A.Patterson(2011), Morgan Kaufman
3		

EVALUATION SYSTEM

Underlying the Assessment Studies	NUMBER	PERCENTAGE OF GRADE
Attendance/Participation	15	%10
Project / Event	1	%20
Mid-Term Exam	1	%35
Final Exam	1	%35
TOTAL	**17**	**%100**

ETHICAL CODE OF THE UNIVERSITY

In case students are cheating on exams or preparation the same, it is not making reference to the source to be used in studies, as for example in assignments, projects and presentation (plagiarism), in accordance with legislations by Ministry of Education and Science of the Republic of North Macedonia and İnternational Vision University, apply relevant disciplinary rules. İnternational Vision University students are expected never attempts in this kind of behavior.