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
DIGITAL LOGIC	**4008**	**2**	**180**	**6**

Prerequisite(s)	None

Course Language	Turkish
Course Type	Required
Course Level	First Cycle
Course Lecturer	
Course Assistants	
Classroom	
Extra Curricular Office Hours and Location	Meeting: Consultancy:

Course Objectives	The objective of this course is to teach the identification, conversion and use of number systems, Boolean algebra, with the help of Karnaugh and Quine-McCuskey algorithm to establish a more simple logic circuits, logic gates circuit, digital logic elements, features and usage.
Course Learning Outcomes	The students who succeeded in this course: • Will be able to learn types and use areas of the number systems, converting the number of BDCs, OCT, BIN and HEX, recognizes the ASCII code of the International Coding and it can be used in programming. • Will be able to understand the abstract mathematics belonging to Boolean algebra rules, with the De Morgan Theorem to simplify the logical functions. • Will be able to explain the simplification of logical functions with the help of Karnaugh maps and Quine algorithm -McCluskey, it transforms logical functions to the form of logical circuits. • Will be able to use flip-flops according to purpose, identification flip-flops and make the circuit design.
Course Contents	The course contents are: number systems and conversions, binary number system and operations, demonstration of the number, error detection and correction methods, Boolean algebra, perform mathematical expressions with the help of logical gates, simplification of logical expressions, Karno map and implementation, KV-Meklas maps, single and double valve according to complement operations, multiplex and demultiplexer, Flip-Flops, digital circuit analysis and synthesis, register and given information for counters and its practical application.

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week	Subjects	Related Preparation
1	Number systems and conversions	Related Chapters of Course Sources
2	BIN, OCT, and HEX BCD number systems and operations	Related Chapters of Course Sources
3	Errors in data transmission, Error detection and correction techniques, Hamming Coding	Related Chapters of Course Sources
4	Boolean algebra, basic rules and De Morgan Theorem	Related Chapters of Course Sources
5	Karno maps and its implementation, circuit design with the aid of Karnaugh maps	Related Chapters of Course Sources
6	Logic gate circuit design and logical function gates	Related Chapters of Course Sources
7	Mid-term Exam	Related Chapters of Course Sources
8	Simplification method with Quin-McClaskey algorithm	Related Chapters of Course Sources
9	Single and double valve according to complement operations	Related Chapters of Course Sources
10	Multiplexer and demultiplexer	Related Chapters of Course Sources
11	Flip-Flops	Related Chapters of Course Sources
12	Digital circuit analysis and synthesis	Related Chapters of Course Sources
13	Registers, structure and use	Related Chapters of Course Sources
14	Counters, structure and use	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	**6**		

GENERAL PRINCIPLE RELATED WITH COURSE

Dear students,

In order to be included, learn and achieve full success that you deserve in the courses you need to come well prepared by reading the basic and secondary textbooks. We are expecting from you carefully to obey to the course hours, not to interrupt the lessons unless is very indispensable, to be an active participant on the courses, easily to communicate with the other professor and classmates, and to be interactive by participating to the class discussions. In case of unethical behavior both in courses or on exams, will be acting in framework of the relevant regulations. The attendance of the students will be checked in the beginning, in the middle or at the end of the lessons. Throughout the semester the students who attend to all lectures will be given 15 activity-attendance points in addition to their exam grades.

SOURCES

COMPULSORY LITERATURE		
No	**Name of the book**	**Author's Name, Publishing House, Publication Year**
1	Dijital mantık ders notları	Fehmi Skender, IVU – Gostivar, 2015
2	Вовед во организација на компјутери	Цвета Мартиновска, Цетис-2006, Скопје
3	Logic design Principals	Edward McClasckey, Prentice hall, 1986

ADDITIONAL LITERATURE		
No	**Name of the book**	**Author's Name, Publishing House, Publication Year**
1	Digital logic design principals	Norman Balabanian&Bredly Carson, John Wierly&Sons, 2001
2		
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 of the students are cheating or attempt to cheat on exams, and in the case of not to reference the sources used in seminar studies, assignments, projects and presentations, in accordance to the legislations of the Ministry of Education and Science of Republic of Macedonia and International Vision University, will be applied the relevant disciplinary rules. International Vision University students are expected never to attempt to this kind of behavior.