



UNIVERSITY OF PRIZREN "UKSHIN HOTI"
FAKULTY OF COMPUTER SCIENCES

INFORMATION TECHNOLOGIES AND TELECOMMUNICATION (ITT)

SYLLABUS									
Level of studies		Bachelor		Program	ITT	Academic year		2018/2019	
Course		Digital Technology							
Year	I	Course status	Mandatory	Code			ECTS (credits)		6
Semester	II								
Teaching weeks		15		Teching hours	60		Lectures	Exercises	
							2	2	
Teaching methodology		Lectures, exercises, seminar papers, midterms, final exam and consultations							
Consultation		One hour/week							
Proffesor		Prof. Asoc. Dr. Samedin Krrabaj		E-mail:		samedin.krrabaj@uni-prizren.com			
				Tel.:		/			
Teaching Assistant		Ass. Arbër Beshiri, Ph. D. C		E-mail:		arber.beshiri@uni-prizren.com			
				Tel.:		/			

Study goal and table of content	Benefits of students
<p>Through this course, it is possible for students to recognize the key elements of digital technology and systems and expanded capabilities that can be provided through system synergies and their functionality.</p> <ul style="list-style-type: none"> The course analyzes and explains the concepts and principles of digital systems and technologies. The analytical approach supports the basic concepts and skills needed to analyze and design logical and sequential circuits. This enables the understanding of the principles of digital design; realization of combinatorial, logical and sequential circuits; logic design basics and their automation. 	<p>After completing this course the students will be able to:</p> <ul style="list-style-type: none"> Understand the basic concepts of digital systems and technologies. Understand logical, sequential, combinatorial circuits, etc. Understand and apply the realization of logical, combinatorial, sequential circuits and their logical design.

Methodology for the implementation of educational topics:			
The course is a combination of lectures, discussions, numerical and laboratory exercises, while the assignments are presented by the laboratory course teachers!			
Conditions for implementation of educational topics:			
Adequate literature, tables, computers, projectors and other IT tools for lectures and exercises.			
Assesing ways of the students (in %):	Evaluation in %:	Grading	
Attendance in lectures and exercises	5% + 5%	Under 51 %	5
Project/Seminar paper	15%	51% - 60%	6
Assigments	15%	61% - 70%	7
Midterm 1	30%	71% - 80 %	8
Midterm 2	30%	81% - 90%	9
Or final exam:	100%	91% - 100%	10

Total:		100%			
Obligations of student:					
Lectures			Exercises		
The student should be regular in lectures and exercises, to use all opportunities to gain knowledge, to use mandatory and wider literature, to be active and respect the rules on higher education, ethics in courtesy and cooperation.			The student should be active in the exercises and reflect the readiness and knowledge of initiatives, ideas and demonstrations of the knowledge acquired in the lectures.		
Student load for the course					
Activities		Hour/ weeks	Days/weeks	Total	
Lectures		2	15	30	
Laboratory exercises		2	15	30	
Contacts with professors /consultations		1	5	5	
Practical work		1	2	2	
Projects, presentations, etc.		1	2	2	
Own study time		3	15	45	
Preparation for final exam		5	6	30	
Time spent in the assessment (midterms, final exam, etc.)		2	3	6	
Notice: 1 ECTS credits= 25 hour commitment, e.g. if the subject has 6 ECTS credits student must have 150 hours during the semester			Total load:	150	
Week	Lectures	Hours	Exercises	Hours	
	Topic		Topic		
1	<ul style="list-style-type: none">Introduction to course organization – syllabus (about lectures)Numerical systems	2	<ul style="list-style-type: none">Introduction to course organization – syllabus (about exercises)Numerical systems	2	
2	<ul style="list-style-type: none">Conversion of binary, octal, decimal and hexadecimal numbers	2	<ul style="list-style-type: none">Conversion of binary, octal, decimal and hexadecimal numbers	2	
3	<ul style="list-style-type: none">Arithmetic of binary, octal and hexadecimal numbersComplementary arithmetic	2	<ul style="list-style-type: none">Arithmetic of binary, octal and hexadecimal numbersComplementary arithmetic	2	
4	<ul style="list-style-type: none">Codes<ul style="list-style-type: none">BCD CodesCyclic CodesOptimal codes	2	<ul style="list-style-type: none">Codes<ul style="list-style-type: none">BCD CodesCyclic CodesOptimal codes	2	
5	<ul style="list-style-type: none">Codes<ul style="list-style-type: none">Security CodesError detection codesCodes for correcting mistakes	2	<ul style="list-style-type: none">Codes<ul style="list-style-type: none">Security CodesError detection codesCodes for correcting mistakes	2	
6	<ul style="list-style-type: none">Boolean algebra	2	<ul style="list-style-type: none">Boolean algebra	2	
7	<ul style="list-style-type: none">Combination circuits	2	<ul style="list-style-type: none">Combination circuits	2	
8	<ul style="list-style-type: none">Midterm 1	2	<ul style="list-style-type: none">Consultations about midterm 1	2	
9	<ul style="list-style-type: none">Coders	2	<ul style="list-style-type: none">Coders	2	

10	<ul style="list-style-type: none"> Decoders 	2	<ul style="list-style-type: none"> Decoders 	2
11	<ul style="list-style-type: none"> Code convertors Indicators 	2	<ul style="list-style-type: none"> Code convertors Indicators 	2
12	<ul style="list-style-type: none"> Multiplexers Demultiplexers 	2	<ul style="list-style-type: none"> Multiplexers Demultiplexers 	2
13	<ul style="list-style-type: none"> Comparators Arithmetic circuits 	2	<ul style="list-style-type: none"> Comparators Arithmetic circuits 	2
14	<ul style="list-style-type: none"> Simulation of combined logical circuits Sequential circuits Registers and counters 	2	<ul style="list-style-type: none"> Simulation of combined logical circuits Sequential circuits Registers and counters 	2
15	<ul style="list-style-type: none"> Midterm 2 	2	<ul style="list-style-type: none"> Consultation about midterm 2 	2

LITERATURE:

Essential literature:

1. Agni Dika. Qarqet Kompjuterike Kombinuese. Fakulteti Elektroteknik, Universiteti i Prishtinës, 2005.
2. Morris M. Mano & Mishaël D. Ciletti. Digital Design, 5th Edition.

Additional literature:

1. Parag K. Lala. Principles of Modern Digital Design. John Wiley & Sons, Inc., Hoboken, New Jersey, 2007.
2. Charles H. Roth. Fundamentals of Logic Design. 4th Edition. Jr., PWS Publishing Company.

NOTICE:

- Generally lecture presentations will be made through MS PowerPoint, tables, material usage, computer programs and numeric exercises.
- Additional resources (scientific papers, publications, national bulletins, as well as recent discoveries and research) will be provided by professors.
- In the absence of the opportunity for practical work to be organized weekly, in cooperation with the management of the university, this activity will be organized on certain days in: organizations, companies, etc.
- During each session will be organized the conversation and co-participation with the students!

NOTICE FOR THE STUDENTS:

- Students are required to be regular in lectures and exercises!
- It will be evaluated when the students collaborate and participate in the lectures and course exercises!
- Timely arrival in lectures and exercises is mandatory!