Basic data of the subject	
Academic unit:	**Faculty of Engineering and Informatics** **Applied Informatics**
Title of the subject:	**Basics of Informatics**
Level:	**Bachelor**
Course Status:	**Obligatory**
Year of studies:	**I**
Number of hours per week:	**3**
Value of Credits - ECTS:	**5**
Time / location:	
Course lecturer:	**Prof.Ass. Dr.Bashkim Çerkini**
Contact details:	bashkim.cerkini@ushaf.net
Course Description:	*This course enables students to know, understand and apply the basic concepts of digital electronics. It provides candidates with an opportunity to develop the knowledge and skills to be able to design and construct logic circuits to meet a design brief.*
Objectives of the course:	*The purpose of the module is to present the way of digital logic design (analysis and design).*
Expected learning outcomes:	*Upon successful completion of this course, student will be able to:* • *To express values in different system: Binary, Octal, Hexadecimal, etc.* • *To formulate different codes for information.* • *Explain and find the functions that perform a digital logic circuit.* • *Analyse logic circuits.* • *Designing the digital circuits.*

Contribution to the student load (which must correspond with learning outcomes)			
Activity	**Hour**	**Day/Week**	**In total**
Lectures with numerical exercises	3	15	45
Internship			
Contacts with teacher / consultations			
Field exercises			
Midterm, seminars and projects.	3	2	6
Homework			
Self-learning time student (at the library or at home)	3	15	45
Final preparation for the exam	7	2	14
Time spent on evaluation (tests, quiz and final exam)			
Projects and presentations.	3	5	15
Total			**125**

Teaching methodology:	*The course takes 15 weeks with 2 hours of lectures and 2 hour weekly individual and group exercises.* *Exercises will be held in the form of individual and group work in which concrete examples will be discussed.* *Active participation is extremely important so students are encouraged to attend lectures and exercises regularly and contribute to the discussions that take place in lectures. Lectures, exercise, individual work, discussions and group work.*
Assessment methods:	*Final exam: 70%; Course work: 30%*
The ratio of theory and practice:	*60% theory and exercises with 40% lab work.*
Literature	
Basic Literature:	1. *Agni Dika "Qarqet digjitale kombinuese I", Universiteti i Prishtinës, 2008*
Additional Literature:	2. *S.M. Deokar, A. A. Phadke, "Digital Logic Design and VHDL", Wiles, 2009*
Designed learning plan	
Week:	**Lectures and exercises to be held**
Week one:	*Presentation of the subject*
Week two:	*Numerical systems. The binary number system, arithmetic operations in the binary system. Transformations between systems.*
Week three:	*Codes and encoding. Boolean algebra. Logical functions and their presentation.*
Week four:	*Combinatorial logic circuits.*
Week five:	*Analysis of logic circuits. Synthesis of logic circuits.*
Week six:	*Encoders, decoders, codes transducers.*
Week seven:	*Test 1*
Week eight:	*Multiplexers, de-multiplexers, arithmetic circuits, comparators, ROM memories.*
Week nine:	*Digital sequential circuits. Flip-Flops: SR, JK, D, T.*
Week ten:	*State Tables of the circuits. Diagram of states of the circuit.*
Week eleven:	*Analysis of synchronous and asynchronous sequential circuits.*
Week twelve:	*Design of sequential circuits.*
Week thirteen:	*Design of digital counters.*
Week fourteen:	*Design of memory. Software for simulating logic circuits.*
Week fifteen:	*Test 2*
Academic policies and rules of conduct	
Regular attendance of lectures and exercises is necessary, as well as active participation with discussion and solution of tasks. Not impeding the progress required for learning using mobile phones turned off or in silent mode	