Basic data of the subject	
Academic Unit:	**Faculty of Management**
Subject title:	**Basic Electrical Engineering with Electronics**
Study level:	**Bachelor**
Subject status:	**Elective**
Years of study:	**III**
Number of hours per week:	**4**
Value of credits – ECTS:	**5**
Lecturer of the subject:	**Prof.Dr.Ibrahim Çunaku**
Contact details:	**Ibrahim.çunaku@ushaf.net**
Subject description:	The aim of this subject is basic knowledge of electrical engineering including basic laws of engineering. It deals with studying of electrical and electronic circuits using mathematical methods. Using semiconductors as core materials is an important case study of this subject.
Purpose of subject:	Providing basic understanding of physics laws in engineering. Explanation of electrical engineering phenomenon on utilizing these knowledge on nowadays workforce.
Expected learning outcomes:	Upon completion of this course the student will be able to: • Know about the notions of electrical engineering • Calculate electrical circuits using mathematical methods. • Learn using materials like semiconductors • Learn core electronic elements like resistors, impedances, transistors, capacitors. • Finish the exam without difficulty.

Contribution to student workload
(which should correspond to the students learning outcomes)

Activity	Hours	Days/week	Total
Lectures	2	15	30
Theoretical / laboratory exercises	2	15	30
Practical work	-	-	-
Contacts to the Lecturer / Consultations	1	15	15
Field exercises	-	-	
Tests, student seminars	2	2	4
Home work	-	-	-
Time of self-study (in the library or home)	2	15	30
Final preparation for the exam	1	15	15

Time spent in assessment (tests, quiz, final exam)	1	2	2
Projects, presentations, etc.	-	-	-
Total			**126**
Teaching methodology:	Lectures and exercises, combined with case studies and classroom discussions		
Assessment methods:	Points gathered: 1st test : 20 points. 2nd test: 30 points Active presence and discussion : 10 points Final test: 40 points Total: 100 points (100%)		
Literature			
Basic literature:	➢ Dr. Nexhat Orana: Bazat e Elektroteknikës I, Universiteti i Prishtinës, 1985 ➢ Dr. Nexhat Orana: Bazat e Elektrokenikës II, Universiteti i Prishtinës, 1991 ➢ Isa Haxhiu, Skripta mësimore të Elektronikës, Universiteti i Prishtinës ➢ Ibrahim Cunaku, Materialet e përdorura gjatë ligjëratave, Prishtinë, 2012		
Additional literature:	➢ Prof. Dr.-Ing. H. Ahlers, Grundlagen der Elektrotechnik, Oldenburg, 2000 ➢ H. van Hauth, K. Sch¨a+-tzko, M. Meurer, J. Zastrau et al.Korrektur durch B. Klein, K. Linke, M. Aßmann, Skript zur Vorlesung Grundlagen der Elektrotechnik, 2005 ➢ [7] John R. Cogdell, Foundations of Electrical Engineering, 2nd Edition, Prentice Hall, 1995		
Designed plan of teaching:			
Weeks	**Lecture to be held**		
First week:	Basic concepts of electrical engineering, electricity, electric current, conductor materials and isolators. Literature [1], pages.11-22, literature [4] .		
Second week:	Electric field and potential energy, Gauss`s law Literature [1], pages 52-98, literature [4] .		
Third week:	Electric capacity, and capacitors Literature [1], pages 118-129, literature [3] and [4] .		
Fourth week:	Electrostatic networks, capacitors in series, parallel, and mixed connection. Literature [1], pages 126-129, literature [3] and [4] .		
Fifth week:	Electric current (its intensity. direction, flow, and its measure). Literature [1], pages 193-200, literature [3] and [4]		

Sixth week:	Electrostatic law: Kirchhoff`s 1st law, Joule`s law. Resistor1s connection, work and electric potential energy. Literature [1], pages 205-239, literature [3] and [4]
Seventh week:	Simple electric circuit Literature [1], pages 193-200, literature [3] and [4]
Eighth week:	Complex electrical circuits. Kirchhoff`s 2nd law Literature [1], pages 193-200, literature [3] and [4]
Ninth week:	Magnetic field; its actions, magnetic field forces, ferromagnetism, magnetic induction. Literature [2], pages 9-49, literature [4]
Tenth week:	Alternative current, its measures. Simple periodical voltage in resistor, in coil, and in capacitor. Literature [2] pages 324-335, literature [4].
Eleventh week:	Series R, L, C circuit Literature [2] pages 350-353, literature [3], and [4].
Twelfth week:	Distributing alternating-current electrical power, its calculations Literature [2] pages 363-385 and pages 461-475, literature [4].
Thirteenth Week:	Semiconductors, p-n junction semiconductors, diodes, circuit analysis on diodes, Zener diodes Literature [4].
Fourteenth Week:	Bipolar junction transistor (BJT), physical structure, functional zones, active zone work. Transistor characteristics, transistor circuit analysis on direct current, polarization of BJT, function of transistor as a key; regions of operation, transistor as an amplifier. Literature [4].
Fifteen week:	Solve some exam tests.
Academic Policies and Rules of Conduct:	
Regular attendance, keeping calm and active engagement in dialogue during lectures and exercises is mandatory.	