SYLLABUS

Basic data of the subject	
Faculty:	**Faculty of Engineering and Informatics**
Title of the subject:	**Energy in engineering design**
Level:	**Bachelor**
Course status:	**Core**
Year of studies:	**III**
Number of hours per week:	**3**
Value of Credits - ECTS:	**4**
Time/ location:	
Course lecturer:	**Mr.sc. Ismet Malsiu**
Contact details:	**ismet.malsiu@ushaf.net**

Course description	*This course will be focused to provide students with the knowledge of energy, their sources and their use in production and ultimately in the design of products with the manufacturing of the products using adequate energy source.*
Course objectives:	*The objective of this module is to provide students with basic information on energy sources, in particular the renewable energy, availability and energy needs, conversions or transformations, and their benefits.*
Expected learning outcomes:	*After successful completion of the course, students will be able to:* • *Know renewable energy sources* • *know alternative renewable energies used in production* • *understand environmental impacts and life cycle costs of these forms of energy.* • *understand the rationale for reducing the use of carbon forms of energy and climate change.*

Contribution to the student load (which must correspond with learning outcomes)			
Activity	Hours	Days/weeks	Total
Lectures	3	15	45
Internship	-	-	-
Contacts with teacher / consultations	1	3	3
Field exercises			
Midterm, seminars and projects.	2	4	8
Homework	1	5	5
Studying (at the library or at home)	2	15	30
Final preparation for the exam	2	5	10
Time spent on evaluation (tests, quiz	1	2	2

and final exam)			
Projects and presentations	1	1	1
Total			**104**

Teaching methodology:	*Lectures, seminars, discussions, energy lab work*
Assessment methods:	Intermediate assessment: 35 % Homework and other assignments: 15 % Final exam: 50 %
Literature	
Basic Literature:	1. *Prof. Luan Voshtina, Prof. Fejzullah Krasniqi MENAXHIMI I DHE PRODHIMI I KOMBINUAR I ENERGJISË*
Additional literature:	2. *Prof.dr. Fejzullah Krasniqi ,,NGROHJA DHE KLIMATIZIMI – 1 (Ngrohja)", Universiteti i Prishtinës, Prishtinë 1997* 3. *Voshtina , L: NGROHJA, VENTILIMI DHE KLIMATIZIMI I NDËRTESAVE, BT,Tiranë* 4. *Recknagel, Šprenger, Henman: GREJANJE I KLIMATIZACIJA, përkthim nga gjermanishtja, GK, Beograd,* 5. *4. Zrnić, S.; Čulum, Ž.: GREJANJE I KLIMATIZACIJA, NK, Beograd,*

Designed learning plan:	
Week:	**Lecture**
Week one:	*Energy and work; Man and machines. Historic notes; Availability and energy requirements, conversions or transformations*
Week two:	*Energy distribution. Sources and consumers;*
Week three:	*Natural energy sources; The process of energy requirement;*
Week four:	*World energy sources; Demand and consumption of energy;*
Week five:	*Worldwide distribution of flammable substances;* *Renewable energy sources.*
Week six:	*Information on wind energy (eolic source);*
Week seven:	*Urban waste as an energy source;*
Week eight:	*Information on marine energy; Geothermal energy; Hydropower;*
Week nine:	*Solar power;*
Week ten:	*Characteristics and development of the technology for deriving energy from the wind, solar radiation, water potential, waste and biomass in particular;*
Week eleven:	*Nuclear energy. Fission and fusion;*
Week twelve:	*Life cycle costs and the environmental impact on the above*

	mentioned forms of energy; Procedures for obtaining environmental permissions for wind equipment and hydroelectricity.
Week thirteen:	*National and international financial mechanisms that encourage the usage of low-carbon energy sources.*
Week fourteen:	*Procedures of verifying the affordability, especially the cost of equipment that convert carbon to fossil fuel;*
Week fifteen:	*Reasons why the usage of various forms of carbon energy should be reduced (climate change).*

Academic policies and rules of conduct:
Attendance, appropriate behavior in class, participation in class activities, as well as visits to enterprises are mandatory. Students are also requested to either turn off their mobile phones or put them on silent mode, so as not to interrupt the learning process.