

Course title: Energy and environment

Academic unit:	Faculty of Civil Engineering		
Course name:	Energy and Environment		
Level:	Bachelor		
Course status:	S		
Year of study:	Third year (III) Fifth Semester (V)		
Number of hours per week:	2+0		
ECTS Credits:	3		
Time/Venue:	According to Schedule		
Course teacher:	Prof. Ass. Dr. Mimoza Dugolli		
Contact details:	Email: mimoza.dugolli@uni-pr.edu Tel: +383 45 898987		
Course description	Energy – where do we take it, how do we use it efficiently and how do we decrease its negative impact from its production, conversion, distribution and usage. This is the biggest environmental and social challenge of the world today. This course will give a knowledge to the students, on this issue.		
Course objectives:	This course is a chance that students give a direct contribution on energy management of the local communities. This course will have an Project approach by gathering the students to work and study together and making them develop understanding of energy systems, through their projects. These projects will focus on energy management, efficiency dhe greenhouse reduction.		
Learning outcomes:	The students, on this course will gain knowledge on basic problems on the energy source and the environment and will be able to propose a solution, to understand, apply and discuss concepts and relationship between the energy and environment and the appliance on Environmental engineering.		
Student workload (Consistent with the learning outcomes)			
Activity	Hours	Day/Week	Total
Lectures	2	15	30
Practical work	2	5	10
Contacts hours with teacher	1	2	2
Field Work	1	4	4
Colloquium, seminars	1	1	1
Homework	1	10	10

Self-study time (in the library or at home)	1	7	7
Final exam preparation	8	1	8
Evaluations (tests, quizzes, final exam)	1	1	1
Projects, presentations	1	2	2
Total			75
Teaching methodology:	Lectures and group projects		
Evaluation methods:	Attendance: 10 % First evaluation: 20% Second evaluation: 20 % Project 50% Total 100%		
Literature			
Basic literature:	[1] Prof. Ass. Dr. Mimoza Dugolli Leksione: Energjia dhe Ambienti, FNA, Prishtinë		
Additional literature:	[2] Roger A. Hinrichs and Merlin Kleinbach. "Energy: Its Use and the Environment", Fifth edition, Thompson Learning, 2013. [3] Michale Allaby, "Basics of Environmental Science", Taylor and Francis Group. [4] Gopal Nath Tiwari and Rajeev Kumar Mishra, "Advanced Renewable Energy Sources"		
Course Plan			
Week	Title of the lecture		
Week 1:	Presenting the course syllabus: energy and environment, the main definitions		
Week 2:	Technology and development, entering into te technology, appropriate technology usage,		
Week 3:	The technology importance on social transformation, the importance of technology on the social tranformation; the importance of technology transpere and its impact on society.		
Week 4:	The energy importance of energy on Maslow hierarchy, human development index; energy consume; actuality, demand and offer of the energy in the world.		
Week 5:	Global warming, the clean development mechanism, sustainability, conventional and unconventional sources.		

Week 6:	Renewable sources of energy; solar energy; solar radiation, thermal solar energy; photovoltaic technology.
Week 7:	Hydroenergy; water resources and energy; water turbines, hydro powerplants, hydropower plant clasification.
Week 8:	Wind turbine, wind energy, wind parks and energy control.
Week 9:	Geothermal energy, geothermal energy sources; the usage,
Week 10:	Biomass and bioenergy; sinthetic fuels; biomass, thermal-chemical; physio-chemical dhe biochemical conversion
Week 11:	Hydrogen energy and fuels, Polymer membrane electrolyte (PEM) cells.
Week 12:	(SOFCs), hydrogen production and storage; coal plants and “integrated gassifier fuel cell” (IGFC) systems.
Week 13:	Environmental impact and energy sources; hazards and emitions, storage hazards; nuclear hazards.
Week 14:	Energy storage; methods of energy storage; hibrid vehicles.
Week 15:	Smart grids. Storage, super capacitors.

Academic policies and code of conduct

Regular attendance at lectures and exercises; Calm in the lesson; Disconnection of mobile phones in the hall; Entering the hall in time, etc.