Course title: Environmental data analyses

Course Basic Information	
Academic Unit:	Faculty of Civil Engineering
Course title:	Environmental data analyses
Level:	Bachelor
Course Status:	Mandatory
Year of Study:	Third (III) ; Semester V
Number of Classes per Week:	2+2
ECTS Credits:	6
Time /Location:	According to the timetable
Teacher:	Prof. ass. Dr. Lavdim Osmanaj
Contact Details:	s.bublaku@hotmail.com
Course Description:	Subject of this course includes: Acquisition and processing of environmental information focusing on several areas such as air and water pollution, sediment analysis, etc. Analysis and interpretation of real- time and historical environmental data. Use of computers for analysis and display, assessment of spatial and temporal variability. Basic principles of statistics and GIS. Use of MS Excel software with Statplus and SPSS software. Methods of time series data analysis, including probability and statistics, correlation, sampling and coherence.
Course Goals:	The course is designed to give students the knowledge and practical experience they need to interpret lab and field data. The objective of the course is to provide the students with a basic and applied knowledge of probabilistic and statistical methods to analyze some phenomena, with an emphasis on several environmental data study
Expected Learning Outcomes:	Students who attend this course, will: • obtain necessary background hwo to deal with environmental data • use the proper statistical treatment tests • apply statistical packages to data set • prepare project based on data treatment

Student Workload (should be in compliance with student's Learnign Outcomes)			
Activity	**Hours**	**Day/Week**	**Total**
Lectures	2	15	30
Practical work	2	15	30
Contacts hours with teacher	1	8	8

Consultations during office hours			
Field work	3	4	12
Colloquium, seminars	4	4	16
Homework	2	8	16
Self-study time (in the library or at home)	2	10	20
Final exam reparation	3	6	18
Evaluations (tests, quizzes, final exam)	2	2	4
Projects, presentations, etc.	2	2	4
Total			**158**

Teaching Methods:	Lecture, exercises, field visits and seminar work
Assessment Methods:	Evaluation methods will be as follows: First evaluation 25 % Second evaluation 25 % Homework or other commitments 10 % Regular attendance 10 % Final exam 30 % Total 100 %
Primary Literature:	[1] Handbook of Solid Waste Management by, Frank Kreith , George Tchobanoglous
Additional Literature:	[1] Municipal Solid Waste Management, by: Ludwig Christian, Hellweg Stefanie [2] Integrated Solid waste management A Life cycle inventory, by Forbes McDougall

Designed teaching plan:

Week	Title of the Lecture
Week 1:	Characteristics of environmental quality data
Week 2:	Sampling and quality of monitored environmental data
Week 3:	Statistics and geostatistics in environmental monitoring
Week 4:	Descriptive and inferential statistical techniques
Week 5:	Samples and Population, Samples and random variables
Week 6:	The normal or Gaussian distribution, lognormal distribution and Additional useful distributions
Week 7:	Regression and Correlation
Week 8:	Errors and Detection Limits
Week 9:	Risk assessment and data management
Week 10:	Visual Representation of Data Including Graphical Exploratory Data Analysis
Week 11:	Geographic information systems and their use for environmental monitoring
Week 12:	Soil and vadose zone sampling
Week 13:	Sampling and monitoring of groundwater and surface water
Week 14:	Monitoring near-surface air quality

Week 15:	Physical, chemical and microbiological processes in the environment

Academic Policies and Code of Conduct
Regular attendance of exercises and lectures. Silence during the teaching process Mobile phones and other communication tools will be forbidden Timely entering at lecture hall and well prepared with teaching materials