

Basic data of the subject	
University:	University of Applied Sciences in Ferizaj
Academic unit:	Faculty of Engineering and Informatics
Program:	Applied Informatics
Title of the subject:	Statistical Models
Level:	Bachelor
Course Status:	Obligatory
Year of studies:	II, Semester III
Number of hours per week:	3
Value of Credits - ECTS:	5
Time / location:	
Course lecturer:	
Contact details:	_____
Course Description:	
	<i>Statistical modelling is concerned with building a model which attempts to explain how measurements are related in the presence of random variation. In this course, we are interested in modelling the average value of a response variable given the values of one or more explanatory variables. In this module, we consider linear models which are subject to normally distributed variation. We look at various different ways of estimating model parameters, see how to check that the models we fit are adequate, and discuss how to interpret the models.</i>
Objectives of the course:	
	<i>The aim of the course is to train students in understanding the basic concepts from statistics, their training in the application of statistical instruments in examples of different from Applied Informatics and other fields. In this module, students will learn how to carry out empirical quantitative studies, including design, data collection and data analysis.</i>
Expected learning outcomes:	
	<i>Upon successful completion of this course, student will be able to:</i> <ul style="list-style-type: none"> • <i>To acquire basic statistical concepts, data, their characteristics, forms of their presentation.</i> • <i>To be able to determine the arithmetic, harmonic, geometric mean; Median and fashion.</i> • <i>To master the concept of dispersion, standard deviation and their implementation with examples from economics.</i> • <i>Carry out empirical research</i> • <i>Design a questionnaire and test it</i> • <i>Collect and process the data</i> • <i>Regression model for metric variables</i> • <i>Summarize the findings in a structured report.</i>

Prerequisites:	<i>Familiar with statistical concepts such as mean, median, mode, variance, as well as having basic knowledge of algebra and trigonometry to understand and apply statistical models</i>		
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:	<p><i>The course takes 15 weeks with 1.5 hours of lectures and 1.5 hours 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.</i></p>		
Assessment methods:	<p><i>The student can choose to be assessed one of the two forms of assessment, given below:</i></p> <ol style="list-style-type: none"> <i>1. Form 1: Evaluation with two tests and the Project</i> <i>2. Form 2: Evaluation of the final exam.</i> <p><i>Form 1:</i> <i>In the first form of assessment "Assessment with two tests and project" the student is assessed in four activities that are carried out during the lectures:</i></p> <ol style="list-style-type: none"> <i>1. Test 1 (30%), individual assessment</i> <i>2. Test 2 (30%), individual assessment</i> <i>3. Class activity (10%), individual assessment</i> <i>4. Project (30%), group assessment.</i> <p><i>Additional clarification:</i> <i>If the student in each activity above reaches the maximum points, then he will be evaluated with 100 points.</i></p>		

Students who pass the exam according to Form 1 of the assessment, are released from the obligation to take the final exam. Only if the student is not satisfied with the grade achieved according to form 1, then he can undergo the final exam to obtain a higher grade.

Form 2:

In the second form of evaluation, "Evaluation with the final exam", the student will undergo the exam which will be held after the end of the course lectures and is organized in the exam deadlines, determined by the University Senate.

Through the final exam, the student can achieve a maximum of 70% of the points from the total of 100 points.

The rest of the 30% points must be completed through group work on the Project, an activity carried out during the lectures.

In Test 1, Test 2, and the final exam, the evaluation of the students will be done through an evaluation form, which must be completed individually by the student. The evaluation form will contain objective and subjective questions through which the student's learning outcomes will be evaluated:

- The objective questions will be of the following types: (1) Multiple choice questions, (2) True/False, (3) Completion, and (4) Composition/Matching; questions that will be used to assess the student's abilities to recall and recognize the concepts and material of the course.*
- The subjective questions will be of the Essay/written task type that will be used to assess the student's understanding and abilities to apply the knowledge gained in the analysis, synthesis, and evaluation of the problem, from the answers prepared by the student to the question of submitting.*

Activity in the class means the student's engagement in dealing with the issues discussed in the class, during the lectures

Project (30%), group assessment: it is an activity in which students apply the acquired knowledge in a concrete project. It is carried out in groups of 2 or 3 students who are obliged to carry out the activity, document it, and present it to the subject professor.

	<p><i>For the form of realism and documentation of the activity, all members of the group will be evaluated with the same point (20%), while the evaluation of the presentation skills of the activity is individual and includes 10%.</i></p> <p>Rating: 91-100 points – graded 10 (ten) 81-90 points – graded 9 (nine) 71-80 points – grade 8 (eight) 61-70 points – grade 7 (seven) 51-60 points – grade 6 (six) 0-50 points – The student repeats the exam</p>
The ratio of theory and practice:	<i>100% Theory with numerical exercises.</i>
Literature	
Basic Literature:	<ol style="list-style-type: none"> <i>Nuhiu, Shala , Fundamentals of Statistics, UP</i> <i>Rahmije Mustafa - Topxhiu: HYRJE NË STATISTIKË, Prishtinë, 2016</i>
Additional Literature:	<i>1. Materials provided by the module leader</i>
Designed learning plan	
Week:	Lectures and exercises to be held
Week one:	<i>Course presentation</i>
Week two:	<i>Basic statistical meanings Massive phenomenon Variables Samples Statistical units</i>
Week three:	<i>Stages of statistical study Statistical survey. Data grouping. Statistical analysis Publication and interpretation of data</i>
Week four:	<i>Graphical representations and average algebraic sizes Graphs Simple and weighted arithmetic mean, Geometric mean (geometric mean) simple and weighted.</i>
Week five:	<i>Average position sizes Median (median) Moda Quartiles</i>
Week six:	<i>Absolute indicators of variation Variance Average deviation Standard deviation Dispersion</i>
Week seven:	<i>Test I</i>

Week eight:	<i>Methods of data collection.</i>
Week nine:	<i>Statistical tools for data analysis..</i>
Week ten:	<i>Presentation of data.</i>
Week eleven:	<i>Theories of probability distributions.</i>
Week twelve:	<i>Setting up hypotheses.</i>
Week thirteen:	<i>Linear and non-linear regression.</i>
Week fourteen:	<i>Test 2</i>
Week fifteen:	<i>Course summary and exam preparation</i>
Academic policies and rules of conduct	
<i>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.</i>	