UNIVERSITETI "KADRI ZEKA" UNIVERSITY

Zija Shemsiu, 60000, Gjilan, Kosovë

www.uni-gjilan.net   tel: 0280-390-112

SYLLABUS
*Course***: Probability and Statistic**

Basic information of the course	
Academic unit:	**FAS**
Course Title:	**Probability and Statistic**
Level:	**Bachelor**
Program:	
Course status:	**Obligatory**
Academic year:	**2019/2020**
Year of study:	**Year III, Semester V**
Number of hours per week:	**3+2**
Credits – ECTS:	**7 ECTS**
Timer / Location:	
Professor of subject:	**Prof. Ass. Dr.**
Contact details:	
Description, Objectives and expected resultes	
Course description:	**Course content The probability and statistic includes: the meaning of the algebra and the probability definition; discrete and continuous random variables; conditionality and independence; random numeric characteristics of the case; limit theorem. Description statistic; Point estimate; interval estimate; Testing of hypothesis; correlation and regression**
Objectives of the course:	**The *probabilityand statistic* aims at integrating professional trainings in the field of probability and statistic of bachelor studies. The course objectives are for students to have basic knowledge in the field of Probability and Statistic. Another challenge is to develop students' skills and skills to succeed in solving concrete problems in the field of mathematics whenever the need for Mathematics, Probability and Statistic are required.**
Expected learning outcomes:	**After the successful completion of the subject Probability and Statistics students will be able to:** **• Be familiar with the meaning of algebra and probability and implement this knowledge by solving various problems.** **• Recognize and understand discrete random variables.** **• Recognize and understand the independence of events and the definition of probability conditions.** **• Recognize and understand numerical characteristics of the random variables.** **• Recognize and understand limit theorems.**

	Be familiar with the element of descriptive statistic and implement this knowledge by solving various problems. • Recognize and understand point and interval estimate and implement in practise. • Recognize and understand testin of hypothesis. • Recognize and understand correlation and regression		

Student contribution

Activity	Hours	Day / Week	Total
Lectures	3	15	45
Theoretical exercises / laboratory	2	15	30
Contacts with teacher / consultations	1	15	15
Collocfiums, seminars	3	2	6
Homework	1	15	15
Self-learning time student (at the library or at home)	1	15	15
Final preparation for the exam	2	15	30
Projects, seminars, presentations, etc.	3	1	9
Total			**165**

165:25≈7 ECTS.

Teaching methodology and assessment methods

Teaching methodology:	Regular lessons, lectures, consultations, discussions, individual independent work, term papers (homework), presentations.
Methods of assessment:	The exam consists of a written part and the oral part. The assessment is based on the following activities: Participation and engagement in hours (10%) (Koll.) Test 1-40% (written examination) (Koll.) Test 2-40% (written examination) Seminar papers (individual independent work) - 10% Final exam: 80% (for those who do not pass kollokfiumet). Points Score 91-100 10 81-90 9 71-80 8 61-70 7 51-60 6

Literature

Base literature:	• **Ligjerata të autorizuara nga profesori, Gjilan. 2019.** • **Pranvera Baholli, probabiliteti ne hapesirat e fundme, Tirane 2003.** • **J. Pitman, Probability, Springer Verlag, 1993.** • **Pranvera Baholli, Statistika matematike, Tirane 2003.** • **Andy Field: Discovering Statistics Using SPSS, SAGE Publications, 2005.** • **Pranvera Baholli, Emira Smokthina, Ushtrime te matematikes (I. Matematike. II. Probabilitet dhe Statistike), Tirae, 2004.**

Designed teaching plan:

Week	The lecture to be held
I - week :	**Elementary event space. Algebra, the event. Operations with events.**

	Definition of probability, properties. Probability spaces. The classic and statistical definition of probability.
II - week :	**Definition of Random variables. Examples.** **Random discreet variables.**
III - week :	**Random continuous variables. Conditional probability. Bayesian formula. Examples. Conditional distribution. Independence of events.**
IV - week :	**Independence of random variables. Mathematical Expectation. Preporties of Mathematical expectations. Dispersion. Covariance. Correlation.**
V - week:	**The law of big numbers. The central limit theorem.**
VI- week	**The first colloquium**
VII-week	**Grouping of data. Distribution of frequencies. Presentation of the data on the graph. Median, Quartiles, Asymmetric coefficients etc. Parametric point estimation etc.**
VIII-week	**Methods of biggest probability. Interval estimation of mathematic exception if n tend to infinite.**
IX-week	**Interval estimation of mathematic exception with normal distribution when variance is known and unknown.**
X-week	**Interval estimation of variance with normal distribution n (n tends to infinite)**
XI-week	**Interval estimation of variance with normal distribution when mathematic exception is known and unknown.**
XII-week	**Testing of hypothesis for probability of normal distribution (n tends to infinite)**
XIII-week	**Testing of hypothesis for mathematical exception with normal distribution when variance is known and unknown.**
XIV-week	**Testing of hypothesis for comparison of two independent random variables with normal distribution.**
XV-week	**The second colloquium**
Academic policies and rules of etiquette:

Regular attendance of students assessed with 10 points,
- Students are free to ask questions and active participation in all teaching activity.
- They are not allowed cell phones, late arrival or departure from the class without reason.
- Plagiarism and copying in exams are penalized under the statute and other regulations of the university.
- The Code of conduct applies to both students and teachers.