



Меѓународен Универзитет Визион - International Vision University
 Universiteti Ndërkombëtar Vizion - Uluslararası Vizyon Üniversitesi

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SYLLABUS

COURSE NAME	COURSE CODE	SEMESTER	COURSE LOAD	ECTS
PROBABILITY THEORY	4021	4	180	6

Prerequisite(s)	None
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Course Language	Turkish
Course Type	Elective
Course Level	First Cycle
Course Lecturer	
Course Assistants	
Classroom	
Extra-Curricular Office Hours and Location	Meeting: Consultancy:

Course Goals	The aim of this course is to consider basic theory and applications of probability theory.
Program Outcomes	The students who succeeded in this course; <ul style="list-style-type: none"> • Will be able to use methods and theorems of the combinatorial analysis, • Will be able to analyze axioms of probability, • Will be able to analyze the distribution functions and their properties, • Will be able to understand conditional probability, total probability and Bayes formula, • Will be able to analyze random variables, distributions of discrete and continuous random variables and their expectations, variances, • Will be able to analyze hazard rate and mean residual life functions.
Course Contents	Repeated combinations, Binomial Theorem, The concept of random variables, Functions of random variables, The relationship between distributions.

WEEKLY SUBJECTS AND RELATED PREPARATION STUDIES

Week	Subjects	Related Preparation
1	Set theory, sample space, counting variations, permutations and combinations	Related Chapters of Course Sources
2	Repeated combinations, Binomial Theorem	Related Chapters of Course Sources
3	Identification and proof of the axiom of probability, conditional probability, Bayes theorem	Related Chapters of Course Sources
4	The concept of random variables, discrete and continuous distributions of random variables	Related Chapters of Course Sources
5	Two-dimensional random variables	Related Chapters of Course Sources
6	The expected value and variance of a random variable. Moments and moment generating functions	Related Chapters of Course Sources
7	Mid-term Exam	Related Chapters of Course Sources
8	Functions of random variables	Related Chapters of Course Sources
9	Some distribution of random variables: Bernoulli, Binomial, multinomial distribution, Geometric, Negative Binomial	Related Chapters of Course Sources
10	Some distribution of random variables: Hypergeometric, Poisson, Uniform	Related Chapters of Course Sources
11	Some distributions of continuous random variables: Normal distribution	Related Chapters of Course Sources
12	Normal approach in the binomial distribution	Related Chapters of Course Sources
13	Some distributions of continuous random variables: uniform, exponential, Gamma, Beta	Related Chapters of Course Sources
14	The relationship between distributions	Related Chapters of Course Sources
15	Final Exam	Related Chapters of Course Sources

ECTS / WORKLOAD TABLE

Presentation / Seminar			
Hours for off-the-classroom study (Pre-study, practice)	14	3	42
Midterm Exam	1	12	12
Final examination	1	14	14
Total Work Load			
ECTS		6	

GENERAL PRINCIPLE RELATED WITH COURSE

Dear students,

In order to be included, learn and achieve full success that you deserve in the courses you need to come well prepared by reading the basic and secondary textbooks. We are expecting from you carefully to obey to the course hours, not to interrupt the lessons unless is very indispensable, to be an active participant on the courses, easily to communicate with the other professor and classmates, and to be interactive by participating to the class discussions. In case of unethical behavior both in courses or on exams, will be acting in framework of the relevant regulations. The attendance of the students will be checked in the beginning, in the middle or at the end of the lessons. Throughout the semester the students who attend to all lectures will be given 15 activity-attendance points in addition to their exam grades.

SOURCES

COMPULSORY LITERATURE		
No	Name of the book	Author's Name, Publishing House, Publication Year
1	Olasılık Teorisi	Ahmet Hamdi Kayran , Prof. Dr. Mehmet Nadir Yücel, Papatya Yayıncılık Eğitim, 2014
2	Applied Statistics and Probability for Engineers-3rd ed.	Douglas C. Montgomery, George C. Runger. John Wiley & Sons, Inc., 2003
3	Mathematical Statistics with Applications	I. Miller, M. Miller, John E. Freund's Pearson Prentice Hall, Seventh Edition, New Jersey, 2004

ADDITIONAL LITERATURE		
No	Name of the book	Author's Name, Publishing House, Publication Year
1	Kavramsal Yorumlar ve Uygulamalarla Olasılık Teorisi	Prof. Dr. Aladdin Şamilov, Nobel Yayın Dağıtım, 2014
2	Introduction to probability with statistical applications	Geza Schay, Birkh'auser, 2007
3		

EVALUATION SYSTEM

Underlying the Assessment Studies	NUMBER	PERCENTAGE OF GRADE
Attendance/Participation	15	%10
Project / Event	1	%20
Mid-Term Exam	1	%35
Final Exam	1	%35
TOTAL	17	%100

ETHICAL CODE OF THE UNIVERSITY

In case of the students are cheating or attempt to cheat on exams, and in the case of not to reference the sources used in seminar studies, assignments, projects and presentations, in accordance to the legislations of the Ministry of Education and Science of Republic of Macedonia and International Vision University, will be applied the relevant disciplinary rules. International Vision University students are expected never to attempt to this kind of behavior.