



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

Adres: Ul. Major C. Filiposki No.1, Gostivar – Makedonya
tel: +389 42 222 325, www.vizyon.edu.mk, info@vizyon.edu.mk

DERS İZLENESİ (SYLLABUS)

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

| | |
|-----------------|------|
| Prerequisite(s) | None |
|-----------------|------|

| | |
|--|-------------|
| Course Language | Turkish |
| Course Type | Elective |
| Course Level | First Cycle |
| Course Lecturer | |
| Course Assistants | |
| Classroom | 106 |
| Extra-Curricular Office Hours and Location | |

| | |
|------------------|--|
| Course Goals | This course aims to consider basic theory and applications of probability theory including probability axioms, distribution functions, conditional probability, total probability and Bayes formula, random variables, distributions of discrete and continuous random variables and their expectations, hazard rate, and mean residual life functions. |
| Program Outcomes | The students who succeeded in this course; 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 | This course aims to provide basic theory and applications of Probability Theory. |

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,

You need to be included in the flow, please follow the course of learning and using that to achieve our success you deserve, you need to practice every day on topics that are covered by the course. It takes practice reading basic and auxiliary literature that is strictly recommended. You should visit classes course I need to make an effort to visit all the professors' lectures. Your activity on the session will be assessed by your professors and the Battle active participant in the discussions that will take place during the time. Students visiting lectures for all at the end if an additional 15 points.

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 YAYINCILIK EĞİTİM,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 YAYIN DAĞITIM ,2014 |
| 2 | | |
| 3 | Introduction to probability with statistical applications | Geza Schay ,Birkh`auser 2007 |

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 students are cheating on exams or preparation the same, it is not making reference to the source to be used in studies, as for example in assignments, projects and presentation (plagiarism), in accordance with legislations by Ministry of Education and Science of the Republic of Macedonia and International Vision University, apply relevant disciplinary rules. International Vision University students are expected never attempts in this kind of behavior.