UNIVERSITÀ DI PAVIA

Anno Accademico 2016/2017

PROBABILITY - NOTIONS

Enrollment year	2015/2016
Academic year	2016/2017
Regulations	DM270
Academic discipline	
Department	DEPARTMENT OF MATHEMATICS "FELICE CASORATI"
Course	MATHEMATICS
Curriculum	PERCORSO COMUNE
Year of study	2°
Period	1st semester (03/10/2016 - 13/01/2017)
ECTS	9
Lesson hours	84 lesson hours
Language	ITALIAN
Activity type	ORAL TEST
Teacher	BASSETTI FEDERICO (titolare) - 6 ECTS DOLERA EMANUELE - 3 ECTS
Prerequisites	Mathematical analysis and linear algebra of the first year of the course in mathematics
Learning outcomes	The purpose of the course is to tell the beginning student of mathematics the basic facts of the theory of probability
Course contents	Extended summary 1.- Definition of probability. 2.- Probability distribution of a random number 3.- Conditional probabilities and stochastic independence 4.- Distribution of a random vector and conditional distributions in some special cases 5.- Numerical characteristics of a probability distribution: expectation, variance, moments, regression, covariance, correlation

	6.- Integral transformations: characteristic function, moment generating function and their application to the calculus of distinguished probability distributions, which are of interest for statistics 7.- Some remarkable inequalities and hints of limit theorems in probability theory: elementary examples of weak laws of large numbers and Lindeberg- LÃ©vy version of the central limit theorem
Teaching methods	Lectures and exercises sessions
Reccomended or required readings	Notes by E. Regazzini, available at http://www-dimat.unipv.it/~bassetti/ See also Robert Ash (2008) Basic Pobability Theory, Dover
Assessment methods	Written examination followed by an oral examination.
Further information	Written examination followed by an oral examination.
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile