UNIVERSITÀ DI PAVIA

Anno Accademico 2015/2016

STATISTICS MATHEMATICAL NOTIONS

Enrollment year	2013/2014
Academic year	2015/2016
Regulations	DM270
Academic discipline	MAT/06 (PROBABILITY AND MATHEMATICAL STATISTICS)
Department	DEPARTMENT OF MATHEMATICS "FELICE CASORATI"
Course	MATHEMATICS
Curriculum	PERCORSO COMUNE
Year of study	3°
Period	1st semester (01/10/2015 - 15/01/2016)
ECTS	6
Lesson hours	56 lesson hours
Language	ITALIAN
Activity type	ORAL TEST
Teacher	BASSETTI FEDERICO (titolare) - 6 ECTS
Prerequisites	Probability, linear algebra, calculus
Learning outcomes	Introduction to mathematical statistics, bayesian and frequentistic.
Course contents	An overview of basic concepts and tools of mathematical statistics Extended summary -Basic examples (gaussian samples, binomial models) -Maximum likelihood estimators -Sufficient statistics, complete statistics, factorization theorem -unbiased estimators. UMVUE. -exponential families -basic asymptotic theory -confidence interval -testing statistical hypothesis

	-Neyman-Pearson tests -goodness of fit test -linear regression, anova -basic bayesian statistics (prior, posterior, predictive distributions) -decision theory -exponential families for bayesian inference -conjugate priors -linear model (BLUE, Gauss-Markov theorem, gaussian linear model, MLE, test)
Teaching methods	Lectures
Reccomended or required readings	-Bickel, P.J. and Doksum, K. A. Mathematical statistics, Holden-Day Inc.
Assessment methods	written and oral examinations
Further information	written and oral examinations
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile