

PÓS-GRADUAÇÃO – Ementa de disciplina  
Mestrado e Doutorado em Economia

DISCIPLINA: Estatística I  SIGLA: ESTI	CÓDIGO: MDPEEC002														
PROFESSOR: Marcelo Jovita Moreira	CARGA HORÁRIA: 40h  CRÉDITOS: 4														
DATA DE INÍCIO: DATA DE FIM:	OBRIGATÓRIA: <input checked="" type="checkbox"/> SIM <input type="checkbox"/> NÃO CURSO: <input type="checkbox"/> M <input type="checkbox"/> D <input checked="" type="checkbox"/> MD														
PRÉ-REQUISITO: Álgebra Linear															
ÁREA DE CONCENTRAÇÃO: Estatística e Econometria															
<p>EMENTA</p> <p><b>Curso de Estatística I</b></p> <p>This is an MA/PhD course in statistics and econometric theory. Topics to be covered in the course include probability measure, random variables, distributions and densities, expectations and conditional expectations, families of distributions and transformations, methods of estimation and optimality, hypothesis testing, confidence sets, and introduction to asymptotic theory. Class usually meets on Mondays and Fridays, 3:30-5:30pm. Sessions are on Wednesdays, 3:30-5:30pm. <i>Classes or sessions are not allowed to be recorded.</i></p> <p><b>Assignments and Grading</b></p> <p>See tentative calendar for problem sets and exams. The midterm will receive a grade out of 40 (denote this grade MT). The final exam will receive a grade out of 50 (call it FI). There will be 4 problem set. The teaching assistant will give a grade out of 10 for each student (call this grade PS). The grade will not count in the overall grade if you do better in the final. The overall course grade is <math>CG = MT + \max(PS, 0.2 * FI) + FI</math>.</p> <p><b>Tentative calendar (updated April 6, 2022)</b></p> <table border="1"> <thead> <tr> <th>Date</th> <th>Observation</th> </tr> </thead> <tbody> <tr> <td>May-2</td> <td>PS1</td> </tr> <tr> <td>May-13</td> <td>PS2</td> </tr> <tr> <td>May-20</td> <td>midterm</td> </tr> <tr> <td>Jun-3</td> <td>PS3</td> </tr> <tr> <td>Jun-15</td> <td>PS4</td> </tr> <tr> <td>Jun-24</td> <td>final exam</td> </tr> </tbody> </table> <p>Course Outline</p> <p><b>1. Probability Theory</b></p> <p>(a) Elementary Probability Theory (H 1; CB 1.1–1.3; LR 2.1-2.2)</p>		Date	Observation	May-2	PS1	May-13	PS2	May-20	midterm	Jun-3	PS3	Jun-15	PS4	Jun-24	final exam
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- (b) Random Variables, Distribution Functions, Functions of Random Variables (H 2; CB 1.4–1.6, 2.1-2.2)
- (c) Special Distributions (H 3; CB 3)
- (d) Joint Distributions, Conditional Distributions, Independence of Random Variables (H 4 and 5; CB 4.1–4.3)
- (e) Convergence, Laws of Large Numbers, Central Limit Theorems (H 7-9; CB 2.3, 5.5)

## 2. Statistical Inference

- (a) Minimum Variance Unbiased Estimation (H 6; CB 7.3)
- (b) Method of Moments and Maximum Likelihood Estimation (H 10- 12; CB 7.2.1-7.2.2, 10.1.1-10.1.2)
- (c) Hypothesis Testing (H 13; CB 6.1, 6.2.1, 8)
- (d) Confidence sets (H 14; CB 9)

OBJETIVOS

BIBLIOGRAFIA