M.Sc. Economics

Code:		**Type:**	M.Sc. 2nd year

Title:	Measure Theory (Elective course)

Lecturer:	Stefano Demichelis

ECTS:	3	**Contact hours (per semester):**	10 á 120 min.

Semester:	September 2010	**Frequency of the lecture:**	10 á 120 min.

Dates:	September 13th until September 24th, 2010

Prerequisites:	A basic understanding of what mathematical reasoning is (see the ref. to Courant & Robbins).

Learning objectives (What are the intended learning outcomes? Which skills will be acquired?):

Students are supposed to learn basic notions of measure theory, capacity theory and probability theory and to know how to apply them in a sensible way to economic situations. The main emphasis will be on Concept and methods rather than nonsensical abstractions and silly formalism.

Content (Which professional competence and which contents will be imparted?):

- Borel ans sigma algebras, meaure theory on R, Lebesgue integrals, hints on capacities and Choquet integrals.
- Probability measures, convergence of probability measures, martingales, hints on large deviations theory.
- Topics and pace of the course will be adapted to the background and interest of the audience.

Teaching approach (Description of the learning and teaching methods):

Lecture

Workload (Definition of workload (ECTS), divided in pre-modules (e.g. pre-readings), core-modules (contact hours), post-modules (e.g. case studies)):

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Language of instruction (Information on the language of teaching):

English

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Obligatory literature (E.g. scripts, books, articles, cases, papers):
Courant Robbins: What Is Mathematics? An Elementary Approach to Ideas and Methods. (strongly recommended, most „mathematical“ and „theoretical“ economists have not read it... and it shows!)

Additional literature (E.g. books, articles, cases, papers):
Choquet: Lectures on Analysis Doob Measure theory Falconer: Fractal Geometry Deuschel, potsch: Large Deviations

Mode of examination (Mode of the examinations and tests (e.g. oral or written examination, lecture, homework, papers, class participation):
There will be a final written exam.

Grading (A maximum of 20% outside the class room):
Final exam 100%.

Special features (E.g. excursion, guest speaker):
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Contact information:	**Office hours:**
Stefano Demichelis, Ph.D. Dipartimento di matematica Università di Pavia 27100 Pavia Phone: +39 339 4830154 E-Mail:Sdm.golem@gmail.com Web: http://www-dimat.unipv.it/demichelis/	By appointment

Course website:
https://cecnet.tuwien.ac.at/