Market engineering
Syllabus

Information at a glance

Course:	Market Engineering
Web Site:	http://www.dma.unive.it/~paolop
Professor:	Marco LiCalzi and Paolo Pellizzari ([licalzi,paolop]@unive.it)
Lectures:	See schedule below
Office Hours:	After class or by appointment

Introduction. Economic institutions evolve, but they are also designed. In particular, market protocols are complex artifacts. Their design requires attention to details. Market engineering complements game theory with experiments and computational simulations; see [Roth, 2002], "The Economist as Engineer: Game Theory, Experimentation, and Computation as Tools for Design Economics".

Purpose of course. The course aims to offer a review of mechanism design and computational economics with an eye to market engineering. In the first part, we cover the material in T. Borgers, "An introduction to the theory of mechanism design", 2008. In the second part, a few chapters from the "Handbook of Computational Economics", vol. 2, 2006, are discussed together with related references.

Prerequisites. You must read in advance the paper by A. Roth, "The economist as engineer: Game theory, experimentation, and computation as tools for design economics". Econometrica, 70(4):1341-1378. Knowledge of the game theory at the level of the first-year course is assumed. Not much else is required, except for an interest in computational methods and simulation.

Teaching method. Lectures are used to describe various models, with a discussion of their motivation, mathematical formulation and (computational) results. In a few cases, a program will be used to reproduce the model and/or collect the data that are analyzed.

Examination policy. You have to orally present/discuss a research article and write a short survey of at least five papers whose content is related with the material of the course.

Tentatively, grading will be based on active participation to lectures (15%), your presentation (45%) and the paper (40%).

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Schedule

Just too early!

Reading list

[Borgers, 2008] Borgers, T. (2008). *An introduction to the theory of mechanism design.* www-personal.umich.edu/ tborgers/LectureNotes.pdf.

[Roth, 2002] Roth, A. E. (2002). The economist as engineer: Game theory, experimentation, and computation as tools for design economics. *Econometrica*, 70(4):1341–1378.

[Tesfatsion and Judd, 2006] Tesfatsion, L. and Judd, K. L., editors (2006). *Handbook of Computational Economics*, volume 2 of *Handbook of Computational Economics*. Elsevier.