Contract theory

Course title – Intitulé du cours	Contract theory
Level / Semester – Niveau /semestre	Deeqa
School – Composante	Ecole d'Economie de Toulouse
Teacher – Enseignant responsable	Daniel Garrett, Takuro Yamashita
Other teacher(s) – Autre(s) enseignant(s)	
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Other teacher(s) – Autre(s) enseignant(s)	
Lecture Hours – Volume Horaire CM	30
TA Hours – Volume horaire TD	
TP Hours – Volume horaire TP	
Course Language – Langue du cours	English
TA and/or TP Language – Langue des TD et/ou TP	English

Teaching staff contacts:

Daniel Garrett (First Part): Office T582, daniel.garrett@tse-fr.eu

Takuro Yamashita (Second Part): office T 590, takuro.yamashita@tse-fr.eu

Course Objectives:

First part: Daniel Garrett. My part of the course is aimed at covering some classic topics in contract theory, especially focusing on moral hazard. The aim is to go beyond the treatment of moral hazard that was seen in earlier classes, in terms of solving standard moral hazard models, but also in terms of additional topics such as "robust contracting" and dynamics.

Second part: Takuro Yamashita. My part of the course is to introduce some topics in mechanism design theory. I plan to cover first introductory/intermediate levels of mechanism design, and then cover various topics in mechanism design. The first part of the course would be based on my lecture notes regarding these topics, and the second part of the course would be to read some recent papers in those topics together. The (main) target students are those who are in DEEQA and want to do research in microeconomic theory and/or its applications.

The goal is to make students familiar with some topics in mechanism design theory, especially their formal modeling and proof techniques, so that the students get prepared to independently

digest/evaluate academic papers and have basic background for writing DEEQA/PhD theses in those or relevant fields.

Prerequisites :

First part: Although there is no formal prerequisite, I would assume some basic mathematical knowledge (algebra, analysis, probability, etc). Also, basic knowledge of game/contract/mechanism design theory would be helpful.

Second part: Although there is no formal prerequisite, I would assume some basic mathematical knowledge (algebra, analysis, probability, etc). Also, basic knowledge of game/contract/mechanism design theory would be helpful.

Practical information about the sessions:

Laptops/tablets are allowed if they are used for taking notes. Students' active participation is expected. Unjustified late arrival/absence may be penalized.

Grading system :

Final exam (either in-class or take-home)

Bibliography/references :

First part: Based on Dan's lecture note. Some additional references will be provided.

Second part: Based on Takuro's lecture note.

Session planning :

First part:

Part 1: Moral hazard: risk aversion, limited liability, robustness, multi-agent (tournaments)

Part 2: Dynamic contracting: Repeated moral hazard, dynamic mechanism design, relational contracts

Second part:

Part 1: Revelation principle, Revenue equivalence, VCG mechanisms, Optimal auction, Bilaterl trade, Public goods, Optimal taxation, Correlated types. (Some of these topics are also covered in Micro 2 in M2, and hence only briefly covered in this course)

Part 2: TBD. Potential topics include: Informed principals, Multi-dimensional screening, Allocation externality, Limited commitment, Implementation, Robust mechanism design.

Distance learning *:*

This course is planned to be either a distance-learning mode or a hybrid of a distance-learning and face-to-face mode.

For the face-to-face mode, the lecture is basically in a classroom, although online materials will be provided if necessary. For the distance learning mode, online materials are provided in advance of the lecture, complemented by interactive Q&A sessions and other materials that ensure the students' understanding.