Universidad Carlos III de Madrid

DENOMINACIÓN ASIGNATURA: Game Theory		
POSTGRADO: MÁSTER UNIVERSITARIO EN ECONOMICS Profesor/a: Francisco Marhuenda	ECTS:	CUATRIMESTRE: 1

CRONOGRAMA DE LA ASIGNATURA (versión detallada)

SEMANA	SESIÓN	DESCRIPCIÓN DEL CONTENIDO DE LA SESIÓN (En su caso, incluir las recuperaciones, tutorías, entrega de trabajos, etc)	GRUPO (marcar X) 1	GRUPO (marcar X) 2	Indicar espacio Necesario distinto aula (aula informática, audiovisual, etc..)	TRABAJO DEL ALUMNO DURANTE LA SEMANA DESCRIPCIÓN	HORAS PRESENCIALES	HORAS TRABAJO Semana Máximo 7 H
1	1	Normal form games. Definition of a Game. Assumptions. Representation of a game. Best response correspondence.	X				1.5	2
1	2	Exercises on Normal Form Games		X			1.5	
2	3	Nash equilibrium. Pure strategy Nash equilibria.	X	X			1.5	2
2	4	Exercises on Computing Pure Nash Equilibria.	X	X			1.5	
3	5	Computing NE. Weak and strict dominance. Dominance Solvability. Successive Elimination of Dominated Strategies.	X				1.5	2
3	6	Examples of NE		X			1.5	

4	7	Mixed strategy Nash equilibria Interpretation.	X				1.5	2
4	8	Finding mixed strategy NE. Examples. Discussion of multiple NE.		X			1.5	
5	9	Extensive Form Games. Sequential Games. Representation of sequential games. Equilibrium in sequential games.	X				1.5	2
5	10	Information sets. Subgames. Subgame Perfect Nash Equilibrium.		X			1.5	
6	11	Extensive Form Games. Noncredible Threats. Computation of SPNE. Backward induction.	X				1.5	2
6	12	Examples and applications of extensive form games.		X			1.5	
7	13	Applications of game theory. Credibility and Commitment. Strategic Commitment. Removing Strategies. First-Mover advantage. Burning Money. Option Value. Option Value with Competition.	X				1.5	2
7	14	Exercises.		X			1.5	
8	15	Oligopoly. The Cournot Model of Oligopoly. The Bertand Model of Oligopoly with Differentiated Products. The Bertand Model of Oligopoly with Homogenous Products. Homogenous Products and competition in quantities, sequential moves: the	X				1.5	2

		Stackelberg Model. First Mover Advantage.						
8	16	Exercises on Oligopoly		X			1.5	
9	17	Dynamic Competition. Repeated Games. Definition and examples. Repeated Prisoners' Dilemma. Games repeated finitely many times. Games repeated infinitely many times. Discount factors. Trigger strategies. Tit-for-Tat. Dynamic versus Static Oligopoly Models.	X				1.5	2
9	18	Exercises on repeated games		X			1.5	
10	19	Cooperative Pricing. Dynamic Competition versus Static Competition. Conditions for Collusion.	X				1.5	2
10	20	Exercises on Cooperative Pricing		X			1.5	
11	21	Static Games with Incomplete Information. Imperfect Information versus Incomplete Information. Bayesian Games. Definition. Bayesian Nash equilibrium. Cournot oligopoly with incomplete information.	X				1.5	2
11	22	Exercises on Static Games with Incomplete Information.		X			1.5	

12	23	First-Price, Sealed-Bid Auctions. Continuous types, Grab the dollar.	X				1.5	2
12	24	Exercises on auctions		X			1.5	
13	25	Dynamic Games with Incomplete Information. Perfect Bayesian Equilibrium. Sequential rationality. Examples.	X				1.5	2
13	26	Exercises on Dynamic Games with Incomplete Information.		X			1.5	
14	27	Signaling Games. Pooling and separating equilibria. Signaling Costs. Examples.	X				1.5	2
14	28	Final Exam		X			1.5	
TOTAL HORAS							42	28