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**Master Seminar on**  
**Game Theory: Concepts and Applications in IO**  
**Winter Term 2024/25**

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The Seminar on “Game Theory. Concepts and Applications in IO“ is aimed at all students interested in advanced game theory and its applications. It will presumably take place on January 17, 2025. Precondition is some profound knowledge in Applied Microeconomics and Industrial Organization and the willingness to learn new game theoretical concepts and techniques.

Registration: You have to register online via ILIAS. The application is open from Monday, October 21, 10 am until Thursday, October 24, 10 am. The places are limited to 12 participants. The topics and places are allocated according to a first-come-first-served system.

Organizational Meeting: There will be a mandatory kick-off meeting on Friday, October 25, at 11.15 am. In this meeting, we will clarify the contents and the key messages of the presentations and the seminar papers. Therefore, it is important that you have skimmed the relevant model before the talk.

Presentation: The presentations are limited to 20 minutes so that some time is left for discussion. The aim of the presentation should be that fellow students understand the core of the model, i.e. the topic to be explained and the method used to solve the model. Your task is fulfilled in the best possible way, if you succeed in inspiring other students for the topic. The presentations should be very focussed, possible extensions should be postponed to the critical discussion at the end.

Criteria for grading are (i) self-dependence in preparing the presentation and the seminar paper, (ii) clarity and persuasiveness of the presentation and the paper, and (iii) taking an active part in the seminar.

### ***Topics and References:***

#### **1. Multiple Nash Equilibria: Price Competition with Increasing Marginal Cost**

Dastidar, K.G. (1995), On the Existence of Pure Strategy Bertrand Equilibrium. *Economic Theory* 5, 19-32.

## **2. Bayesian Equilibria: Auctions with Asymmetrically Distributed Preferences**

Krishna, V. (2002), Auction Theory, Chapter 4.3.

## **3. Subgame Perfect Nash Equilibria: Strategic Manager Compensation**

Stadler, M., Neus, W. (2023), The Tragedy of the Common Holdings. Manager Compensation and Price Competition. *Journal of Institutional and Theoretical Economics* 179, 271-287.

## **4. Differential Games: Capital Accumulation and Price Competition**

Stadler, M. (2015), Game Theory and Industrial Organization. Dynamic Models of Price Competition. In: H.J. Ramser et al. (eds.), *Entwicklung und Perspektiven der Wirtschaftswissenschaft*. Tübingen, Mohr Siebeck, pp. 283-309.

## **5. Markov Perfect Games: Dynamic Competition**

Stadler, M. (2015), Game Theory and Industrial Organization. Dynamic Models of Price Competition. In: H.J. Ramser et al. (eds.), *Entwicklung und Perspektiven der Wirtschaftswissenschaft*. Tübingen, Mohr Siebeck, pp. 283-309.

## **6. Perfect Bayesian Equilibria: Intertemporal Information Transmission**

Jeitschko, T.D., Liu, T., Wang, T. (2018), Information Acquisition, Signaling, and Learning in Duopoly. *International Journal of Industrial Organization* 61, 155-191.

## **7. Signaling Games: Strategic Signaling by Burning Money**

Stadler, M. (2015), Game Theory and Industrial Organization. Dynamic Models of Price Competition. In: H.J. Ramser et al. (eds.), *Entwicklung und Perspektiven der Wirtschaftswissenschaft*. Tübingen, Mohr Siebeck, pp. 283-309.

## **8. Signal-Jamming Games: Quality Uncertainty and Informative Advertising**

Grunewald, A., Kräkel, M. (2017), Advertising as Signal Jamming. *International Journal of Industrial Organization* 50, 443-459.

## **9. Global Games: Creditor Coordination and the Price of Debt**

Morris, S., Shin, H.S. (2004), Coordinating Risk and the Price of Debt. *European Economic Review* 48, 133-153.

## **10. Cooperative Games: Merger Bargaining**

Stadler, M., Neubecker, L. (2010), Endogenous Merger Formation and Welfare in Asymmetric Markets. In: H.J. Ramser et al. (eds.), *Marktmacht*. Tübingen, Mohr Siebeck, pp. 49-64.

## **11. Evolutionary Games with Replicator Dynamics: Behavioral Economics**

Gale, J., Binmore, K.G., Samuelson, L. (1995), Learning to Be Imperfect: The Ultimatum Game. *Games and Economic Behavior* 8, 56-90.

## **12. Firm Strategies and Markets: Theory-Based Case Studies**

Popular topics are: Location decisions, Product positioning, R&D and innovation, Platform competition, among others, depending on special interests or practical experience.