

## Syllabus

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|---|--|--------------|--------------|
| <b>Name:</b>  |  |              |              |
| <b>Strategie und Wettbewerb I - Introduction to Game Theory</b>   |  |              |              |
| <b>Responsible:</b>   |  |              |              |
| Professor Toker Doganoglu, Ph.D, Chair of Industrial Economics  |  |              |              |
| <b>Program:</b>   | <b>Type:</b>   | <b>Term:</b> | <b>ECTS:</b> |
| Bachelor  | Lecture  | Winter       | 6 CP         |
| <b>Contents &amp; Objectives:</b>   |  |              |              |
| Students which complete this course will be able to   |  |              |              |
| (i) explain different equilibrium concepts (Nash equilibrium, subgame perfect equilibrium, bayesian equilibrium, perfect bayesian equilibrium); |  |              |              |
| (ii) explain for which kind of strategic situation each of these equilibrium concepts were developed;   |  |              |              |
| (iii) apply these concepts to simple realistic strategic situations;  |  |              |              |
| (iv) choose the appropriate equilibrium concept which fits best to a given strategic situation  |  |              |              |
| <b>Prerequisites:</b>   |  |              |              |
| <b>None</b>   |  |              |              |
| <b>Course Structure:</b>  |  |              |              |
| <b>Week</b>   | <b>Content</b>   |              |              |
| 1   | I Static games with complete information<br>I.a Concept of a game                      |              |              |
| 2   | I.b Solution concepts and the Nash equilibrium   |              |              |
| 3   | I.c Continuous strategy sets   |              |              |
| 4   | I.d Nash equilibrium in mixed strategies   |              |              |
| 5   | II Dynamic games with complete information<br>II.a Subgame perfect Nash equilibrium    |              |              |
| 6   | II.b Repeated games  |              |              |
| 7   | III Static games with incomplete information: Bayesian Nash equilibrium                |              |              |
| 8   | IV Dynamic games with incomplete information<br>IV.a Perfect Bayesian Nash equilibrium |              |              |
| 9   | IV.b Signaling games   |              |              |
| 10  | V  |              |              |
| 11  | VI   |              |              |
| 12  |  |              |              |

**Literature:**

[1] Games Of Strategy, Dixit and Skeath (and Reiley), Norton.

[2] Various other readings that will be made available on WueCampus.

[3] Game Theory for Applied Economists, R. Gibbons, Princeton.

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| <b>Grading:</b>  |
| 60 Minute Exam   |
| <b>Contact:</b>  |
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