

Budapest University of Technology and Economics
Faculty of Economic and Social Sciences

Course Syllabus and Requirements

Economic Analysis of Technological Processes

| 2. | Course code | Semester | Hours per week (Theory/Practice) | ECTS credits | Language of Instruction | Level (BSc/BA/MSc/MA) |
|----|-------------|--------------------------|-------------------------------------|--------------|-------------------------|--------------------------|
| | BMEGT30N002 | autumn/ <u>spring</u> | 4/0 | 6 | English | Msc/MA |

3. Course supervisor (name, title, department):

Dr. Zsombor Ligeti, associate professor, deputy chair of department, Department of Economics

4. Instructor

| Name | Position | Department/Institute/ availability (Room, e-mail address) |
|----------------|---|--|
| Zoltán Bánhidi | Junior Research Fellow | Department of Economics, Building Q, Wing A, 2nd floor / Room 225, e-mail: zbanhidi@gmail.com |
| Lectures: | Each Tuesday and Friday between 10:15 a.m. and 11:45 a.m. | |

5. Preliminary requirements

Basic algebra and calculus.

6. Academic prerequisites

None

7. Objectives and description of the course

Industrial Organization and Anti-Trust Policy (IO) covers topics that range from production and pricing decisions of the firms in imperfectly competitive markets through collusive behavior, mergers, entry decisions and entry deterrence down to the role of advertising and incentives in economic activities. IO draws heavily on non-cooperative game theory to analyze the strategic behavior and interaction of firms. By the end of this course you will understand the intuition behind different market models and you may be able to apply those models in analyzing firm behavior and its social impact. In addition, you will be capable of assessing the benefits and potential shortcomings of the anti-trust policy measures in the US and in Europe.

8. Teaching methods

The course material is accessible to students without a strong mathematical background. The course will introduce students to the basics of game theory and its applications. I shall encourage in-class discussions following the presentations in each class. In-class presentations should not be longer than 15 minutes. Each student must prepare a PPT slide show and a draft on its analysis that should be submitted before the presentation.

9. Requirements and assessment

According to our academic regulation, students may miss a maximum of 25% of the classes. There will be two mid-term exams, a presentation and a final exam, which will include multiple choice and ‘true or false’ type questions.

Hungarian (BME) and ECTS grading scale

| <i>Percentage achieved</i> | <i>Hungarian grade</i> | <i>ECTS equivalent</i> | <i>Explanation for Hungarian grades</i> | <i>Hungarian grade/remark</i> | <i>ECTS equivalent</i> | <i>Explanation for Hungarian grades/remark</i> |
|----------------------------|------------------------|------------------------|---|-------------------------------|------------------------|--|
| 85-100 | 5 | A | Excellent | Nem vizsgázott | I | Incomplete (no credit) |
| 70-84 | 4 | B | Good | Aláírva | S | Signed (no credit) |
| 55-69 | 3 | C | Satisfactory | Megtagadva | R | Denied (no credit) |
| 40-54 | 2 | D | Pass | Nem jelent meg | DNA | Did not attend (no credit) |
| 0-39 | 1 | F | Fail | <i>Törölve</i> | (None) | <i>Expunged</i> |

10. Exams, make-up duties and make-up exams

In order to be allowed to take the final exam, students need to pass two mid-term exams and give a presentation.

11. Course material, compulsory and recommended readings:

Required textbook:

Pepall, L., G. Norman and D. Richards, *Industrial Organization: Contemporary Theory and Empirical Applications*, 4th edition. Wiley-Blackwell, 2008 (referred to as PNR).

Power point lecture notes, uploaded on the Department's website.

13. Workload and detailed class schedule

| | <u>Topics to be discussed, readings required for the class, other assignments</u> |
|--------|---|
| Week 1 | <p><i>Industry structures and welfare analysis</i></p> <ul style="list-style-type: none"> • Efficiency and the size of the market • Structure-Conduct-Performance (SCP) and the new IO • Antitrust policy • Measures of industry concentration • Costs and market structure • Single product and multiple product firms • Network externalities • The role of the government <p><i>Readings:</i> PNR Chapter 1, Sections 1.1–1.6, 1.A, Ch. 2, Section 2.1–2.5</p> |
| Week 2 | <p><i>Pricing strategies of the single product monopoly</i></p> <ul style="list-style-type: none"> • Uniform pricing, two part tariffs, and price discrimination of the single product monopoly • Multi-plant monopolist • Durable goods and leasing • Product variety and price discrimination <p><i>Readings:</i> PNR Ch. 3, Sections 3.1–3.5</p> |
| Week 3 | <p><i>The multi-product monopoly</i></p> <ul style="list-style-type: none"> • Pricing • Spatial Models • Tie-Ins and Bundling • The Microsoft case <p><i>Readings:</i> PNR Chapter 4, Sections 4.1–4.4, 4.A, B, C</p> |

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|--------|--|
| Week 4 | <p><i>Oligopolies</i></p> <ul style="list-style-type: none"> • Introduction to game theory and Nash equilibrium • Static Models of Oligopoly and Spatial Models • Quality Competition <p><i>Readings:</i> PNR Chapter 5, Sections 5.1–5.5.</p> |
| Week 5 | <p><i>Monopoly power and predatory conduct</i></p> <ul style="list-style-type: none"> • Market entry and entry deterrence • Contestable markets • Capacity expansion and other strategic investments • Brand proliferation and predatory pricing <p><i>Readings:</i> PNR Chapter 6, Sections 6.1–6.7</p> <p>First mid-term exam</p> |
| Week 6 | <p><i>Collusion and cartels</i></p> <ul style="list-style-type: none"> • Repeated games, threats, and sub-game perfect Nash equilibrium • Cartels, undercutting, and price wars <p><i>Readings:</i> PNR Chapter 7, 7.1–7.6.</p> |
| Week 7 | <p><i>Mergers</i></p> <ul style="list-style-type: none"> • Horizontal mergers and product differentiation • Vertical mergers <p><i>Readings:</i> PNR Chapter 8, Sections 8.1–8.6 + Appendix</p> |
| Week 8 | <p><i>Vertical relations and restraints</i></p> <ul style="list-style-type: none"> • Vertical restraints and double marginalization • Royalties; Two part tariff • Resale Price Maintenance (RPM) • The provision of retail services • RPM and variable demand • Non-price vertical agreements <p><i>Readings:</i> PNR Chapter 9, Section 9.1–9.7.</p> |
| Week 9 | <p><i>Advertisement and information</i></p> <ul style="list-style-type: none"> • Advertising • Moral hazard • Incentive theory <p><i>Readings:</i> PNR Chapter 10, Sections 10.1–10.6.</p> |



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| Week 10 | <p><i>Course summary</i></p> <p>Second mid-term exam</p> |
| Week 11 | <p>Presentation of Student group #1: Industry structures and measures – with real-life examples.</p> <p>Presentation of Student group #2: The single-product monopoly’s pricing strategy – with real-life examples.</p> |
| Week 12 | <p>Presentation of Student group #3: Game theory and oligopolistic competition – with real-life examples.</p> <p>Presentation of Student group #4: The monopoly’s predatory conduct – with real-life examples.</p> |
| Week 13 | <p>Presentation of Student group #5: Cartels – with real-life examples.</p> <p>Presentation of Student group #6: Horizontal and vertical mergers – with real-life examples</p> |
| Week 14 | <p>Presentation of Student group #7: Vertical relations and restraints – with real-life examples.</p> <p>Presentation of Student group #8: Advertising – benefits and costs for consumers and for the companies – with real-life examples.</p> |

Grading

Two mid-term exams (20%, max 10% each), final exam (60%), in-class presentation and contribution to class discussion (20%). Extra points (2%) are awarded for every mistake you can spot in the lecture notes/slides.