



**BERGISCHE
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DATUM 7. Dezember 2023

Matching Assignments in Practice and their Consequences

**Prof. Dr. Kerstin Schneider, Dr. Arash Naghavi,
Kevin J. Zuchanek, Thomas Gößl**

SS 2024

Contents. This seminar surveys and discusses some primary debates and theories concerning matching assignments. We will begin with an introduction to matching assignments and briefly discuss the assignment mechanisms in various application areas. Then, we will explore the consequences of different mechanisms, particularly for school segregation and educational attainment, the number of potential organ transplants and blood donations, the assignment of doctors to hospitals, and more!

Prerequisites. This seminar is an advanced bachelor-level seminar, focusing on theoretical and empirical studies that use state-of-the-art microeconomic techniques. Therefore, seminar participants should have some knowledge of econometrics. The seminar is held in English.

Time. 10:00 – 14:00, seven meetings in total.

A 3-weeks lecture will introduce the topic of the seminar. Later, there will be an introduction to Python and matching assignments will be implemented. Then, students will present and discuss some recent empirical papers in the second part of the seminar at the end of the semester. You can find below the exact dates of the lectures and student presentations.

Room. Tba.

Office hours. Consultation appointment on request via mail: zuchanek@wiwi.uni-wuppertal.de

Examination.

- Short Python take home exercise based on the content of the 4th week and 5th week. The test must be sent to goessl@wiwi.uni-wuppertal.de by **July 19, 2024**.
- Summary Presentation: a 30-minute presentation of a published paper, including possible extension, chosen from the provided list below.
- Referee report: writing a short critical evaluation, including a short summary, and a 30-minute presentation of a recent published or working paper chosen from the provided list below. The report must be sent to zuchanek@wiwi.uni-wuppertal.de by **July 19, 2024**.

Notes. This syllabus may be subject to changes and updates. If you have further questions, please contact Kevin J. Zuchanek (zuchanek@wiwi.uni-wuppertal.de).

Syllabus

1st week; April 15, 2024: Lecture

10:00 - 14:00: **Introduction and review of the assignment mechanisms**

- Gale, D. & Shapley, L. S. (1962): "College Admission and the Stability of Marriage." *The American Mathematical Monthly*, 69(1), 9-15.
- Roth, A. E. & Wilson, R. B. (2019): "How Market Design Emerged from Game Theory." *The Journal of Economic Perspectives*, 33(3), 118-143.
- Abdulkadiroğlu, A., & Sönmez, T. (2003). "School choice: A mechanism design approach." *American Economic Review*, 93(3), 729-747.
- Saidman, S. L., Roth, A. E., Sönmez, T., Ünver, M. U. & Delmonico, F. L. (2006): "Increasing the Opportunity of Live Kidney Donation by Matching for Two- and Three-Way Exchanges." *Transplantation*, 81(5), 773-782.

2nd week; April 22, 2024: Lecture

10:00 - 14:00: **School Choice: Educational attainment, school segregation and parents' preferences**

- Beuermann, D. W., & Jackson, C. K. (2018). "The short and long-run effects of attending the schools that parents prefer." *Journal of Human Resources*, forthcoming.
- Oosterbeek, H., Sóvágó, S., & van der Klaauw, B. (2021). "Preference heterogeneity and school segregation." *Journal of Public Economics*, 197, 104400.
- Kapor, A. J., Neilson, C. A., & Zimmerman, S. D. (2020). "Heterogeneous beliefs and school choice mechanisms." *American Economic Review*, 110(5), 1274-1315.
- Ketel, N., Oosterbeek, H., Sóvágó, S. & van der Klaauw, B. (2023). "The (Un)Importance of School Assignment." *IZA Discussion Paper Series*, No. 16591

3rd week; April 29, 2024: Lecture

10:00 - 13:00: **Matching Assignments in Health Economics**

- Sun, T., Lu, S. F. & Ji, G. Z. (2016): "Solving shortage in a priceless market: Insights from blood donation." *Journal of Health Economics*, 48, 149-165.
- Cheng, Y. & Yang, Z. (2021): "Efficient Kidney Exchange with Dichotomous Preferences." *Journal of Health Economics*, 80, 102536.
- Heo, E. J., Hong, S. & Chun, Y. (2022): "Efficient use of immunosuppressants for kidney transplants." *Journal of Health Economics*, 85, 102650.

13:00 - 14:00: **How to write summary and referee reports**

4th week; May 06, 2024: Python I

10:00 - 12:00: Lecture: Introduction to Python I

12:00 - 14:00: Tutorial: Application I

5th week; May 13, 2024: Python II

10:00 - 12:00: Lecture: Introduction to Python II

12:00 - 14:00: Tutorial: Application II

For the 4th and 5th week, the dates are divided into a lecture and an application part. We will first deal with individual chapters of monographs on the introduction to Python. Then, we will implement matching algorithms by using code hosting platforms and also do some exercises in Python.

6th week; July 01, 2024: Student presentations

10:00 - 14:00: **Student presentations of published papers**

Students will choose one paper from the list below, read it carefully and present it on this date. Papers are assigned on a first-come-first-serve basis. An instruction on how to write the summaries will be provided on **April 29, 2024**. The summaries must be sent to zuchanek@wiwi.uni-wuppertal.de by **July 19, 2024**.

- Calsamiglia, C., & Güell, M. (2018). "Priorities in school choice: The case of the Boston mechanism in Barcelona." *Journal of Public Economics*, 163, 20-36.
- Rogero-García, J. & Andrés-Candelas, M. (2020): "School Choice and Post Hoc Family Preference in Spain: Do They Match Up?", *Education Policy Analysis Archiv*, 28(3).
- De Haan, M., Gautier, P. A., Oosterbeek, H. & van der Klaauw, B. (2023): "The Performance of School Assignment Mechanisms in Practice." *Journal of Political Economy*, 131(2), 388-455.
- Lu, M., Ma, C. A., & Yuan, L. (2003): "Risk selection and matching in performance-based contracting.", *Health Economics*, 12, 339-354.
- Kojima, F. & Hatfield, J. W. (2010). "Substitutes and stability for matching with contracts." *Journal of Economic Theory*, 145, 1704-1723.

7th week; July 08, 2024: Student presentations

10:00 - 14:00: **Student presentations of recent working papers**

Students will choose one paper from the list below, read it carefully, write a 4-5 pages referee report of the paper, and present it on this date. Papers are assigned on a first-come-first-serve basis. An instruction on how to write a referee report will be provided on **April 29, 2024**. The referee reports must be sent to zuchanek@wiwi.uni-wuppertal.de by **July 19, 2024**.

- Dustan, A. (2018). "Family networks and school choice." *Journal of Development Economics*, 134, 372-391.
- Greaves, E. & Weldon, M. (2021). "Segregation by choice? School choice and segregation in England."
- Pais, J. & Pintér, Á. (2008): "School Choice and Information: An experimental study on matching mechanisms." *Games and Economic Behaviour*, 64, 303-328.
- Kojima, F. & Troyan, P. (2011): "Matching and Market Design: An Introduction to Selected Topics.", *The Japanese Economic Review*, 62(1), 82-98.
- Teltser, K. F. (2019): "Do Kidney Exchange Improve Patient Outcomes?" *American Economic Journal: Economic Policy*, 11(3), 427-453.
- Lima, B. A., Dias, L., Henriques, A. C. & Alves, H. (2010): "The Portuguese Match Algorithm in the Kidney Paired Donation Program.", *Organ, Tissues & Cells*, 13, 25-32.