Course unit English denomination	Economics of human capital
Teacher in charge (if defined)	Marco Bertoni (10h) Andreas Menzel (6h) Anastasia Terskaya (4h)
Teaching Hours	20
Number of ECTS credits allocated	4 ECTS
Course period	April - June 2025
Course delivery method	☒ In presence ☐ Remotely ☐ Blended
Language of instruction	English
Mandatory attendance	☒ Yes (80 % minimum of presence) ☐ No
Course unit contents	1. The role of human capital for growth AM 2. Investment in education and health MB 3. Human capital production MB 4. Peer effects MB 5. School choice MB 6. Development and schooling AM 7. Development and health AM 8. Geno-economics: genetics & human capital investment AT
Learning goals	This course introduces students to the economic analysis of human capital. It covers topics in the economics of education and health. The course will predominantly adopt an empirical perspective.
Teaching methods	Lectures will be delivered by lecturers, with opportunities for small group discussion. Students may be involved in presenting research articles in class and preparing an individual research proposal as project work for the course.
Course on transversal, interdisciplinary, transdisciplinary skills	☐ Yes ☒ No
Available for PhD students from other courses	☒ Yes ☐ No
Prerequisites (not mandatory)	Basic knowledge of microeconomic models of investment and of production functions. Working knowledge of empirical methods for causal inference.
Examination methods	**Marco Bertoni**

(in applicable)

Part 1. Investment in education and health

- Figlio, D., Giuliano, P., Özek, U., & Sapienza, P. (2019). Long-term orientation and educational performance. American Economic Journal: Economic Policy, 11(4), 272–309.
- Hanushek, E. A., Kinne, L., Lergetporer, P., & Woessmann, L. (2022). Patience, risk-taking, and human capital investment across countries. The Economic Journal, 132(646), 2290–2307.
- Boneva, T., Golin, M., & Rauh, C. (2022). Can perceived returns explain enrollment gaps in postgraduate education? Labour Economics, 77,
- Spence, M. (1973). Job market signaling. The Quarterly Journal of Economics, 87(3), 355–374.
- Clark, D., & Martorell, P. (2014). The signaling value of a high school diploma. Journal of Political Economy, 122(2), 282–318.
- Altonji, J. G., & Pierret, C. R. (2001). Employer learning and statistical discrimination. The Quarterly Journal of Economics, 116(1), 313–350.
- Bedard, K. (2001). Human capital versus signaling models: University access and high school dropouts. Journal of Political Economy, 109(4), 749–775.
- Lange, F. (2007). The speed of employer learning. Journal of Labor Economics, 25(1), 1–35.
- Grossman, M. (1972). On the concept of health capital and the demand for health. Journal of Political Economy, 80(2), 223–255.
- Finkelstein, A., Luttmer, E. F. P., & Notowidigdo, M. J. (2013). What good is wealth without health? The effect of health on the marginal utility of consumption. Journal of the European Economic Association, 11(suppl_1), 221–258.
- Becker, G. S., & Murphy, K. M. (1988). A theory of rational addiction. Journal of Political Economy, 96(4), 675–700.
- Laibson, D. (1997). Golden eggs and hyperbolic discounting. The Quarterly Journal of Economics, 112(2), 443–477.
- Gruber, J., & Kőszegi, B. (2001). Is addiction "rational"? Theory and evidence. The Quarterly Journal of Economics, 116(4), 1261–1303.

Part 2. Human capital production

- Heckman, J. J., Stixrud, J., & Urzua, S. (2006). The effects of cognitive and noncognitive abilities on labor market outcomes and social behavior. Journal of Labor Economics, 24(3), 411–482.
- Cunha, F., & Heckman, J. J. (2007). The technology of skill formation. American Economic Review, 97(2), 31–47.
- Cunha, F., Heckman, J. J., & Schennach, S. M. (2010). Estimating the technology of cognitive and noncognitive skill formation. Econometrica, 78(3), 883–931. https://doi.org/10.3982/ECTA6551

Part 3. Peer effects

- Manski, C. F. (1993). Identification of endogenous social effects: The reflection problem. The Review of Economic Studies, 60(3), 531–542.
- Angrist, J. D. (2014). The perils of peer effects. Labour Economics, 30, 98–108.
- Hoxby, C. M. (2000). Peer effects in the classroom: Learning from gender and race variation. NBER Working Paper No. 7867.
- Lavy, V., & Schlosser, A. (2011). Mechanisms and impacts of gender peer effects at school. American Economic Journal: Applied Economics, 3(2), 1–33.
- Lavy, V., Silva, O., & Weinhardt, F. (2012). The good, the bad, and the average: Evidence on ability peer effects in schools. Journal of Labor Economics, 30(2), 367–414.
- Imberman, S. A., Kugler, A. D., & Sacerdote, B. I. (2012). Katrina's children: Evidence on the structure of peer effects from hurricane evacuees. American Economic Review, 102(5), 2048–2082.
- Angrist, J. D., & Lang, K. (2004). Does school integration generate peer effects? Evidence from Boston's Metco program. American Economic Review, 94(5), 1613–1634.
- Abdulkadiroğlu, A., Angrist, J. D., & Pathak, P. A. (2014). The elite illusion: Achievement effects at Boston and New York exam schools. Econometrica, 82(1), 137–196.
- De Giorgi, G., Pellizzari, M., & Redaelli, S. (2010). Identification of social interactions through partially overlapping peer groups. American Economic Journal: Applied Economics, 2(2), 241–275.
- Duflo, E., Dupas, P., & Kremer, M. (2011). Peer effects, teacher incentives, and the impact of tracking: Evidence from a randomized evaluation in Kenya. American Economic Review, 101(5), 1739–1774.
- Carrell, S. E., Sacerdote, B. I., & West, J. E. (2013). From natural variation to optimal policy? The importance of endogenous peer group formation. Econometrica, 81(3), 855–882.
- Booij, A. S., Leuven, E., & Oosterbeek, H. (2017). Ability peer effects in university: Evidence from a randomized experiment. The Review of Economic Studies, 84(2), 547–578.
- Bertoni, M., Brunello, G., & Cappellari, L. (2020). Who benefits from privileged peers? Evidence from siblings in schools. Journal of Applied Econometrics, 35(7), 893–916
- Murphy, R., & Weinhardt, F. (2020). Top of the class: The importance of ordinal rank. The Review of Economic Studies, 87(6), 2777–2826.
- Bertoni, M., & Nisticò, R. (2023). Ordinal rank and the structure of ability peer effects. Journal of Public Economics, 217, 104797.
- Isphording, I. E., & Zölitz, U. (2020). The value of a peer.
- Brunello, G., Sanz-de-Galdeano, A., & Terskaya, A. (2020). Not only in my genes: The effects of peers' genotype on obesity. Journal of Health Economics, 72, 102349.

- Bertoni, M., López, B. A. M., & Sanz-de-Galdeano, A. (2023). Subjective gender-based patterns in ADHD diagnosis.

Part 4. School Choice

- Abdulkadiroğlu, A., Angrist, J. D., Narita, Y., & Pathak, P. A. (2017). Research design meets market design: Using centralized assignment for impact evaluation. Econometrica, 85(5), 1373-1432.
- Abdulkadroğlu, A., Angrist, J. D., Narita, Y., Pathak, P. A., & Zarate, R. A. (2017). Regression Discontinuity in Serial Dictatorship: Achievement Effects at Chicago's Exam Schools. American Economic Review, 107(5), 240-45.
- Abdulkadiroglu, A., Angrist, J. D., Narita, Y., & Pathak, P. A. (2021). Breaking ties: Regression discontinuity design meets market design. Forthcoming, Econometrica
- Bertoni, M., Gonshorek, F., Klein, T., & Silva, O. (2021). School types.
- Abdulkadiroğlu, A., 2018. RDMD: Using Centralized Assignment for Impact Evaluation. AEA continuing education webcasts

Andreas Menzel:

Part 1: Education in development

- Duflo, Esther. 2001: Schooling and Labor Market Consequences School Construction in Indonesia, American Economic Review 91 (4): 795-813 *
- Prashant Bharadwaj, Leah K Lakdawala, Nicholas Li 2020: Perverse Consequences of Well Intentioned Regulation: Evidence from India's Child Labor Ban, *Journal of the European Economic Association* 18 (3): 1158–1195 *
- Romero, Mauricio, Justin Sandefur, and Wayne Aaron Sandholtz. 2020: Outsourcing Education: Experimental Evidence from Liberia. *American Economic Review* 110(2): 364-400
- Heath, Rachel, and A. Mushfiq Mobarak. 2015: Manufacturing growth and the lives of Bangladeshi women, *Journal of Development Economics*, 115: 1-15
- Baird, Sarah, Craig McIntosh, and Berk Özler. 2011: Cash or Condition? Evidence from a Randomized Cash Transfer Program, *Quarterly Journal of Economics* 126 (4): 1709-1753. (R)
- Macours, Karen, and M. Caridad Araujo. 2021: Education, Income and Mobility: Experimental Impacts of Childhood Exposure to Progresa after 20 Years, Working Paper, Paris School of Economics
- Duflo, Esther, Pascaline Dupas, and Michael Kremer. 2021: The Impact of Free Secondary Education: Experimental Evidence from Ghana. NBER Working Paper 28937
- Singh, Abhijit, Mauricio Romero, and Khartik Muralidharan. 2022: Covid-19 Learning Loss and Recovery: Panel Data Evidence from India. NBER Working Paper 30552

Part 2: Health in Development

- Cramer, Kim Fe. 2023: Bank Presence and Health, LSE Discussion Paper 872 *
- Dupas, Pascaline, and Edward Miguel. 2017: Impacts and Determinants of Health Levels in Low-Income Countries, in *Handbook of Field Experiments* Vol 2, Eds. A. Banerjee and E. Duflo, Elsevier
- Motohashi, Kazuki (2023): Unintended Consequences of Sanitation Investment: Negative Externalities on Water Quality and Health in India. iser.osaka-u.ac.jp/library/dp/2023/DP1210.pdf *
- Kremer, Michael, and Edward Miguel. 2004: Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities, Econometrica 72 (1), 159-217
- Ozier, Owen. 2018: Exploiting Externalities to Estimate the Long-Term Effects of Early Childhood Deworming, AEJ: Applied Economics 10 (3): 235-262
- Jullien, Sophie, David Sinclair, and Paul Garner. 2017: The impact of mass deworming programmes on schooling and economic development: an appraisal of long-term studies, International Journal of Epidemiology 45 (6): 2140-2153 *
- Baird, Sarah, Joan Hamory Hicks, Michael Kremer and Edward Miguel. 2017: Commentary: Assessing long-run deworming impacts on education and economic outcomes: a comment on Jullien, Sinclair and Garner (2016), International Journal of Epidemiology 45 (6): 2140-2153
- Duflo, Esther, Abhijit Banerjee, Amy Finkelstein, Lawrence Katz, Benjamin Olken, and Anja Sautmann. 2020: In Praise of Moderation: Suggestions for the Scope and Use of Pre-Analysis Plans for RCTs in Economics. NBER Working Paper No. 26993

Anastasia Terskaya - Genoeconomics

- Biroli, P., Galama, T. J., von Hinke, S., Van Kippersluis, H., Rietveld, C. A., and Thom,K. (2022). The economics and econometrics of gene-environment interplay. arXiv preprintarXiv:2203.007291
- Von Hinke, S., Smith, G. D., Lawlor, D. A., Propp er, C., and Windmeijer, F. (2016). Genetic markers as instrumental variables. Journal of Health Economics, 45:131{148
- Benjamin, D. J., Cesarini, D., Chabris, C. F., Glaeser, E. L., Laibson, D. I., Age, G. S.-R. S.,Gunason, V., Harris, T. B., Launer,

L. J., Purcell, S., et al. (2012). The promises and pitfalls of genoeconomics. Ann u. Rev. Econ., 4(1):627

- Benjamin, D. J., Cesarini, D., Turley, P., and Young, A. S. (2024). Social-science genomics: Progress, challenges, and future directions
- Beauchamp, J. P., Cesarini, D., Johannesson, M., van der Loos, M. J. M., Koellinger, P. D.,Groenen, P. J. F., Fowler, J. H., Rosenquis t, J. N., Thurik, A. R., and Christakis, N. A. (2011).Molecular genetics and economics. Journal of Economic Perspectives, 25(4):57{82
- Becker, J., B urik, C. A., Goldman, G., Wang, N., Jayashankar, H., Bennett, M., Belsky, D. W.,Karlsson Linner, R., Ahlskog, R., Kleinman, A., et al. (2021). Resource prole and user guide of the polygenic index repository. Nature human behaviour, 5(12):1744{1758
- Okbay, A., Wu, Y., Wang, N., Jayashankar, H., Bennett, M., Nehzati, S. M., Sidorenko, J.,Kweon, H., Goldman, G., Gjorgjieva, T., et al. (2022). Polygenic prediction of educational attainment within and between families from genome-wide association analyses in 3 million individuals. Nature genetics, 54(4):437{449
- Papageorge, N. W. and Thom, K. (2020). Genes, education, and labor market outcomes: evidence from the health and retirement study. Journal of the European Economic Association,18(3):1351{1399
- Barth, D., Papageorge, N. W., and Thom, K. (2020). Genetic endowments and wealth inequality. Journal of Political Economy, 128(4):1474{1522
- Houmark, M. A., Ronda, V., and Rosholm, M. (2024). The nurture of nature and the nature of nurture : How genes and investments interact in the formation of skills. American Economic Review, 114(2):385{425
- Brunello, G., Sanz-de Galdeano, A., and Terskaya, A. (2020). Not only in my genes: The effects of peers' genotype on obesity. Journal of Health Economics.

Suggested readings	Material will be provided in Moodle.
Additional information	max 3750 caratteri