Introduction to the Geography of Innovation

August 19-23, 2024

Lecturer

Tom Broekel is Professor in Regional Innovation at the University of Stavanger School of Business and Law in Norway. His research is focused on the geography of innovation, knowledge networks, analysis of R&D policy, regional news, renewable energies, and tourism. His teaching encompasses courses in innovation studies, economic geography, advanced statistics, social network analysis, and the geography of innovation.

Course objectives

In today's world, technological progress and innovation are not just buzzwords but at the heart of economic development and firm growth. However, the benefits of these advancements are not uniformly distributed, often giving rise to spatial inequalities, societal unrest, and the marginalization of certain regions. The course, 'Introduction to the he Geography of Innovation,' delves into the spatial dynamics of innovation and its critical role in shaping economic landscapes globally.
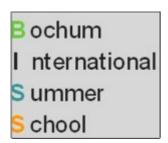
By integrating insights from innovation studies, evolutionary economics, and evolutionary economic geography, this course offers students a comprehensive framework to understand the processes of knowledge generation, diffusion, and application across different geographical contexts. Students will learn about the foundations of innovation dynamics in space and time through a detailed exploration of concepts such as knowledge types, externalities, and knowledge networks alongside contemporary international academic literature.

Moreover, the course critically examines relevant policy frameworks, including the EU research framework programs and the Smart Specialization Strategy. It offers a nuanced understanding of how policy intersects with innovation and its spatial distribution. Students will engage with real-world case studies and policy discussions, equipping them with the tools to contribute to inclusive and spatially aware economic development strategies.

Ultimately, 'The Geography of Innovation' aims to empower students to link theoretical concepts with empirical findings and policy implications, preparing them for the challenges and opportunities of shaping the future economic landscape.

Course content

- Basics of Knowledge and Innovation
- Knowledge Spillover and Externalities
- Types of Proximities
- Knowledge Networks

- Regional Branching and Related Diversification
- The Consequences and Implications of Technological Complexity
- Political Support for Innovation and R&D
- Political Support for Collaboration and Networks

Prerequisites
- **Both bachelor and master students can participate**. Bachelor students must be at least in the second year of their bachelor studies and must have completed basic courses in micro- and macroeconomics

Instructional methods
- On-campus lectures and seminars

Reading list for entry exam
- **B/M** Mokyr, J. (2010): Chapter 2 – The Contribution of Economic History to the Study of Innovation and Technical Change: 1750–1914, in: Hall, B. H., & Rosenberg, N. (2010). Economics of Innovation. Elsevier B.V., pages: 11-50

Additional reading list (optional references will be given during the course)

- **B/M:** Arthur, W. B. (2021). Foundations of complexity economics. *Nature Reviews Physics*, *3*(2), 136–145. https://doi.org/10.1038/s42254-020-00273-3
- Boschma, R.A. (2005). Proximity and innovation: a critical assessment. Regional studies, 39(1): 61-74
- **M:** Boschma, R. A.; Frenken, K. (2009). Technological relatedness and regional branching. In M. P. F. H. Bathelt & D. F. Kogler (Eds.), Dynamic Geographies of Knowledge Creation and Innovation. Routledge. London. UK / New York, USA
- Buenstorf, G., & Fornahl, D. (2009). B2C— bubble to cluster: the dot-com boom, spin-off entrepreneurship, and regional agglomeration. *Journal of Evolutionary Economics*, *19*(3), 349– 378.
- **B/M:** Castaldi, C., Frenken, K., & Los, B. (2015). Related Variety, Unrelated Variety and Technological Breakthroughs: An analysis of US State-Level Patenting. *Regional Studies*, *49*(5), 767–781.
- Cordes. C. (2014). The Application of Evolutionary Concepts in Evolutionary Economics. Papers on Economics & Evolution, 2014-2
- Foray, D.; David, P. A.; Hall, B. (2011). Smart Specialization - From academic idea to political instrument, the surprising career of a concept and the difficulties involved in its implementation. MTEI Working Paper 2011-001
- **B/M:** Iammarino, S., Rodriguez-Pose, A., & Storper, M. (2019). Regional inequality in Europe: Evidence, theory and policy implications. *Journal of Economic Geography*, *19*(2), 273–298. https://doi.org/10.1093/jeg/lby021
- Malecki, E. J. (2010). Everywhere? The geography of knowledge. *Journal of Regional Science*, *50*(1), 493–513. https://doi.org/10.1111/j.1467-9787.2009.00640.x
- **M:** Scott, A. J., & Storper, M. (2015). The nature of cities: The scope and limits of urban theory. *International Journal of Urban and Regional Research*, *39*(1), 1–15

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Time schedule
30 hours (an hour lasts 45 minutes, for a total of 1350 minutes)

		Time	Minutes	Activity	Content
19.08.2024	Monday	09:00-10:30	90	Presentation & Discussion	Introduction & Basics of Knowledge
		11:00-12:30	90	Lecture	Externalities & Knowledge Transfers
		12:30-14:00		Break	
		14:00-15:30	90	Lecture	Proximities
20.08.2024	Tuesday	09:00-10:30	90	Lecture	Agglomeration & Urban Scaling
		11:00-12:30	90	Lecture	Spin-offs & Life Cycle
		12:30-14:00		Break	
		14:00-15:30	90	Lecture	Evolutionary Economics
		16:00-16:45	45	Lecture	The Paradigm of Relatedness
		16:45-17:30	45	Presentation & Discussion	Student Work
21.08.2024	Wednesday	09:00-10:30	90	Lecture	Economic & Technological Complexity
		11:00-12:30	90	Lecture	Empirical Approaches to Relatedness & Complexity
		12:30-14:00		Break	
		14:00-15:30	45	Presentation & Discussion	Student Work
			45	Presentation & Discussion	Student Work
22.08.2024	Thursday	09:00-10:30	90	Lecture	Knoweldge Networks
		11:00-12:30	90	Lecture	Political Support for Onnovation & Networks
		12:30-14:00		Break	
		14:00-15:30	45	Presentation & Discussion	Student Work
			45	Presentation & Discussion	Student Work
23.08.2024	Friday	09:00-10:30	90	Exam	Written Exam
		11:00-12:30	90	Lecture	Final discussions & course reflection
Total minutes			**1350**		

Procedure of course

The course features lectures and discussion sessions. The lectures (usually in the morning, see schedule above) are prepared and executed by Tom Broekel. Slides will be provided in advance. In general, the content of the lectures will be accessible without substantial prior knowledge, however, students are expected to have familiarized themselves with the core readings specified in the reading list (see above).

The afternoons feature student works, which will be done in groups.
They are intended to stimulate and deepen student learning.

Assessment
A written exam will take place on the last day (Friday) of the course.