



**School of Economics**  
**Academic Year 2023-24 Term 1**  
**PhD in Economics**

### **ECON738 Urban and Regional Economics**

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### **COURSE DESCRIPTION**

### **LEARNING OBJECTIVES**

This course presents a topical introduction to urban and regional economics. Students will learn various fundamental models/tools used in urban and regional economics, including monocentric city models, core-periphery new economic geography models, spatial competition models, type-of-cities models, and quantitative spatial economics. We will also study various topics/issues in the recent literature of urban and regional economics, including the inner structure of cities, the system of cities, city size distribution, spatial friction, natural amenities, and the roles of transportation, urban policies, and urban policies and developments.

### **ASSESSMENT METHODS**

Class Presentation	: 20%
Referee Report	: 20%
Homework	: 20%
Final Examination	: 40%
Total	: 100%

- You will pick a paper related to urban and regional economics and present the paper to your class. In addition, you also need to write a referee report to critically evaluate the paper.
  - The paper list will be provided separately at the start of the semester.
- There will be **two homework**. The homework covers the computational aspects of quantitative spatial economics. You are expected to solve models numerically using a programming language of your choice. MATLAB will be an easy entry point if you have not coded before.
- The final exam is a **closed-book exam** on both theory and algorithm.

### **ACADEMIC INTEGRITY**

All acts of academic dishonesty (including, but not limited to, plagiarism, cheating, fabrication, facilitation of acts of academic dishonesty by others, unauthorized possession of exam questions, or tampering with the academic work of other students) are serious offenses.

All work (whether oral or written) submitted for purposes of assessment must be the student's own work. Penalties for violation of the policy range from zero marks for the component assessment to expulsion, depending on the nature of the offense.

When in doubt, students should consult the instructors of the course. Details on the SMU Code of Academic Integrity may be accessed at <http://www.smuscd.org/resources.html>.

## ACCESSIBILITY

SMU strives to make learning experiences accessible for all. If students anticipate or experience physical or academic barriers due to disability, please let the instructor know immediately. Students are also welcome to contact the university's disability services team if they have questions or concerns about academic provisions: [included@smu.edu.sg](mailto:included@smu.edu.sg).

Please be aware that the accessible tables in the seminar room should remain available for students who require them.

## EMERGENCY PREPAREDNESS FOR TEACHING AND LEARNING (EPTL)

Where there is an emergency that makes it infeasible to have classes on campus, classes will be conducted online via WebEx, with no disruption to the schedule. To familiarise students with the WebEx platform, part of this course may be conducted online. The instructor will inform students of which classes, if any, will be conducted as part of this EPTL initiative.

## CLASS TIMINGS

Class sessions are of 3-hour duration per week. Each session will involve a lecture and a discussion of assignments and readings.

### Schedule:

An undergraduate urban textbook is sometimes useful for providing a broader picture, for example, Brueckner, Jan (2011), *Lectures on Urban Economics*, MIT Press.

#### Week 1: Defining City

- What is a City?
- Why are there Cities? (Chapter 1, Brueckner's textbook)
- Dixit-Stiglitz Model
- Additional Reading:
  - Rozenfeld, Hernan, Diego Rybski, Xavier Gabaix and Hernan Makse. 2011. "The area and population of cities: New insights from a different perspective on cities," *American Economic Review* 101(5): 2205-2225.
  - Duranton, Gilles, "Classifying locations and delineating space: An introduction," *Journal of Urban Economics*, 2021, p. 103353.

#### Week 2: New Economic Geography

- Krugman (1991)
- Helpman (1998)
- Murata (2003)
- Additional Reading:
  - Duranton, Gilles & Puga, Diego, (2004). "Micro-foundations of urban agglomeration economies," in: J. V. Henderson & J. F. Thisse (ed.), *Handbook of Regional and Urban Economics*, edition 1, volume 4, chapter 48, pages 2063-2117.
  - Ottaviano, G., T. Tabuchi, and J.F. Thisse (2002), "Agglomeration and trade revisited," *International Economic Review*, 43, pp. 409-435.
  - Fujita, Krugman, and Venables (1999), *The Spatial Economy*, MIT Press.

#### Week 3: Internal Structure of a City and a System of Cities

- Monocentric City Model

- Central Place Theory -- Hsu (2012) and Fujita, Krugman, and Mori (1999)
- Type-of-Cities Model -- Henderson (1974) and Au and Henderson (2006)
- Additional Reading:
  - R.E. Lucas Jr., E. Rossi-Hansberg (2002), "On the internal structure of cities," *Econometrica*, 70(4), pp. 1445-1476.
  - Rossi-Hansberg (2004), "Optimal urban land use and zoning," *Review of Economic Dynamics*.
  - Davis, Donald R., and Jonathan I. Dingel. (2020), "The comparative advantage of cities," *Journal of International Economics*, 123 (2020): 103291.
  - Mori, Tomoya, Tony E. Smith, and Wen-Tai Hsu. (2020), "Common power laws for cities and spatial fractal structures," *Proceedings of the National Academy of Sciences* 117.12: 6469-6475.
  - Hsu, W.-T., T. J. Holmes and F. Morgan (2014), "Optimal City Hierarchy: A Dynamic Programming Approach to Central Place Theory," *Journal of Economic Theory*, 154, pp. 245-273.
  - Rossi-Hansberg, E. and Wright, M.L.J. (2007), "Urban structure and growth," *Review of Economic Studies*, 74(2), pp. 597–624.

#### Week 4: Quantitative Spatial Economics: Theory

- Allen and Arkolakis (2014)
- Additional Reading:
  - Redding, Stephen, and Anthony J. Venables. (2004) "Economic geography and international inequality," *Journal of International Economics* 62(1): 53-82.
  - Redding, S. J. (2016). Goods trade, factor mobility and welfare. *Journal of International Economics*, 101, 148-167.
  - Allen, Treb, and Costas Arkolakis (2023). "Economic Activity across Space: A Supply and Demand Approach." *Journal of Economic Perspectives*, 37 (2): 3-28.
  - Redding, Stephen J. (2023). "Quantitative Urban Models: From Theory to Data." *Journal of Economic Perspectives*, 37 (2): 75-98.

#### Week 5: QSE Application: Internal City

- Numerical methods in QSE.
- Ahlfedlt, Redding, Sturm and Wolf (2015)
- Additional Reading:
  - Hsieh, Chang-Tai and Enrico Moretti (2019), "Housing Constraints and Spatial Misallocation," *American Economic Journal: Macroeconomics*, 11(2), April 2019.
  - Judd, K. L. "Numerical Methods in Economics." MIT press.

#### Week 6: Migration I: Basics

- Artuc, Chaudhuri, and McLaren (2010)
- Bryan and Morten (2019)
- Additional Reading:
  - Monte, F., Redding, S. J., & Rossi-Hansberg, E. (2018). Commuting, migration, and local employment elasticities. *American Economic Review*, 108(12), 3855-3890.
  - Caliendo, L., Opromolla, L. D., Parro, F., & Sforza, A. (2021). Goods and factor market integration: A quantitative assessment of the EU enlargement. *Journal of Political Economy*, 129(12), 3491-3545.

#### Week 7: Migration II: Dynamic Setups

- Caliendo, Dvorkin, and Parro (2019)
- Kleiman, Liu, and Redding (2023)
- Additional Reading:
  - Allen, T., & Donaldson, D. (2018). The geography of path dependence. Unpublished manuscript.

## Week 8: Recess

## Week 9: Migration III: Frontier

- Lagakos, Mobarak, and Waugh (2023)
- Dix-Carneiro, Pessoa, Reyes-Heroles, and Traiberman (2023)
- Additional Reading:
  - Pellegrina, H. S., & Sotelo, S. (2021). Migration, Specialization, and Trade: Evidence from Brazil's March to the West (No. w28421). National Bureau of Economic Research.

## Week 10: Transportation:

- Duranton and Turner (2011)
- Donaldson and Hornbech (2016)
- Allen and Arkolakis (2022)
- Additional Reading
  - Baum-Snow, N. (2007). Did highways cause suburbanization?. *The quarterly journal of economics*, 122(2), 775-805.
  - Faber, B. (2014). Trade integration, market size, and industrialization: evidence from China's National Trunk Highway System. *Review of Economic Studies*, 81(3), 1046-1070.
  - Baum-Snow, N., Brandt, L., Henderson, J. V., Turner, M. A., & Zhang, Q. (2017). Roads, railroads, and decentralization of Chinese cities. *Review of Economics and Statistics*, 99(3), 435-448.
  - Baum-Snow, N., Henderson, J. V., Turner, M. A., Zhang, Q., & Brandt, L. (2020). Does investment in national highways help or hurt hinterland city growth?. *Journal of Urban Economics*, 115, 103124.
  - Fan, J., Lu, Y., & Luo, W. (2021). Valuing domestic transport infrastructure: A view from the route choice of exporters. *Review of Economics and Statistics*, 1-46.

## Week 11: China Studies

- Tombe and Zhu (2019)
- Fan (2019)
- Additional Reading
  - Ma, L., & Tang, Y. (2020). Geography, trade, and internal migration in China. *Journal of Urban Economics*, 115, 103181.
  - Gai, Q., Guo, N., Li, B., Shi, Q., & Zhu, X. (2021). Migration costs, sorting, and the agricultural productivity gap. Working Paper.
  - Tian, Y. (2022). International trade liberalization and domestic institutional reform: Effects of wto accession on chinese internal migration policy. *Review of Economics and Statistics*, 1-45.

## Week 12: Presentations