

Resilience Theory in Urban Planning & Design

Instructor: Liao Kuei-Hsien, Ph.D., Associate Professor

Meeting time: Wednesday 15:30-18:00

Meeting room: 630, College of Public Affairs

INTRODUCTION

Originated in ecology, resilience theory has received great attention in recent years in urban planning and design. As an increasingly popular term, resilience is prone to misuse and abuse. The application of resilience theory to urban planning and design could bring a new perspective to advance the discipline, but it requires a solid understanding of resilience theory itself in the first place. This is the purpose of this course. In this course, we will first explore the original notion of resilience in ecology, and subsequently examine its development and application to other fields relevant to urban planning and design. While resilience has been discussed with regards to various facets, this course focuses on the resilience to environmental—rather than socio-economic—changes, and more specifically to natural hazards. We will explore how the concept of resilience provides an alternative paradigm for managing natural hazards. In this new paradigm, cities are viewed as complex adaptive, social-ecological systems, where humans and inherent environmental dynamics are tightly interacting with each other. This course takes a seminar format, where students are required to read and synthesize academic journal papers and are expected to actively engage in class discussion.

OBJECTIVES

After taking this course, students are expected to be able to:

1. gain an in-depth understanding of resilience theory and articulate what it involves
2. identify the different conceptualizations and interpretations of resilience
3. articulate how resilience can be applied to the management of a specific type of natural hazard
4. enhance the ability of English reading and speaking

GENERAL COURSE POLICY

1. Students are expected to attend all classes. Be punctual to respect the instructor and your classmates. ***Do not come to the class if you are late for more than 5 minutes*** unless a justifiable reason can be provided.
2. The success of this seminar course depends on the active participation of each student, and hence the full engagement in class is required.
3. The cell phone or laptop can only be used in class as a dictionary.
4. Check emails at least once a day to avoid missing important announcements about this course.

LANGUAGE-RELATED POLICY

1. This course is conducted fully in English, but occasionally the instructor might translate difficult vocabularies and concepts into Mandarin to facilitate learning.
2. If you don't understand the instructor, never hesitate to ask her to slow down or explain.
3. There is no such thing as "shame" in class. Don't be afraid of speaking "broken English".
4. No one should laugh at anyone's English, including the accent, grammar, and pronunciation.
5. The instructor might correct your grammar, pronunciation, and/or vocabulary; or help finish a sentence that you are struggling with to help you learn English. Try not to feel embarrassed or offended. You learn when your mistakes are pointed out.
6. Understandable English does not necessarily require a great amount of vocabularies. If you don't know the exact vocabulary for a certain thing or concept, try your best to use other vocabularies to describe it.
7. If you've tried hard but still can't precisely express what's in your mind in English, it is fine to ask the instructor for help in Mandarin.

TENTATIVE SCHEDULE

Feb 23		Course introduction
Mar 02	Subject Literature	[Theory] New paradigm in ecology & Complexity Theory <ul style="list-style-type: none">• Pickett STA, Parker VT, Fiedler P. 1992. The new paradigm in ecology: Implications for conservation biology above the species level. Page 65-88 in Fiedler PL, Jain SK, editors. <i>Conservation Biology: The Theory and Practice of Nature Conservation, Preservation and Management</i>. Chapman & Hall, Inc., New York.• Complexity systems: https://www.youtube.com/watch?v=vp8v2Udd_PM Complexity Theory: https://www.youtube.com/watch?v=i-ladOjo1QA
Mar 09	Subject Literature	[Theory] Holling's original notion of resilience <ul style="list-style-type: none">• Holling CS. 1973. Resilience and stability of ecological systems. <i>Annual Reviews of Ecology and Systematics</i> 4: 1-23.
Mar 16	Subject Literature	[Theory] Two interpretations of resilience & paradigm shift in management <ul style="list-style-type: none">• Holling CS. 1996. Engineering resilience versus ecological resilience. Page 31-42 in Schulze PC, editor. <i>Engineering within Ecological Constraints</i>. National Academy Press, Washington, DC.• Holling CS, Meffe GK. 1996. Command and control and the pathology of natural resource management. <i>Conservation Biology</i> 10(2): 328-337.
Mar 23	Subject Literature	[Theory] Social-ecological resilience <ul style="list-style-type: none">• Walker B, Holling CS, Carpenter SR, Kinzig A. 2004. Resilience, adaptability and transformability in social-ecological systems. <i>Ecology and Society</i> 9(2): 5.• Folke C, Carpenter SR, Walker B, Scheffer M, Chapin T, Rockstrom J. 2010. Resilience thinking: Integrating resilience, adaptability and transformability. <i>Ecology and Society</i> 15(4): 20.
Mar 30	Subject Literature	[Theory] Resilience thinking <ul style="list-style-type: none">• Walker B, Salt D. 2012. Preparing for practice: the essence of resilience thinking. Page 1-25 in Resilience Practice: <i>Building Capacity to Absorb Disturbance and maintain Function</i>. Island Press, Washington, DC.
Apr 06		Holiday
Apr 13	Subject Literature	[Application] Social resilience <ul style="list-style-type: none">• Keck M, Sakdapolrak P. 2013. What is social resilience? Lessons learned and ways forward. <i>Erdkunde</i> 67(1): 5-19.• Supplementary reading for your case study: Chapter 2, 3 & 4 in Walker B, Salt D. 2012. Preparing for practice: the essence of resilience thinking. Page 1-25 in Resilience Practice: <i>Building Capacity to Absorb Disturbance and maintain Function</i>. Island Press, Washington, DC.
Apr 20		Case study proposal
Apr 27	Subject Literature	[Application] Hazard/disaster resilience <ul style="list-style-type: none">• Gunderson L. 2010. Ecological and human community resilience in response to natural disasters. <i>Ecology and Society</i> 15(2): 18.• Matyas D, Pelling M. 2014. Positioning resilience for 2015: the role of resistance, incremental adjustment and transformation in disaster risk management policy. <i>Disasters</i> 39(S1): S1-S8.
Mar 04	Subject Literature	[Application] Flood resilience <ul style="list-style-type: none">• Liao K-H. 2012. A theory on urban resilience to floods—a basis for alternative planning practices. <i>Ecology and Society</i> 17(4): 48.• McClymont K, Morrison D, Beevers L, Carmen E. 2019. Flood resilience: a systematic review. <i>Journal of Environmental Planning and Management</i>.

May 11	Subject Literature	<p>[Application] Urban resilience</p> <ul style="list-style-type: none"> • Meerow S, Newell JP, Stults M. 2016. Defining urban resilience: A review. <i>Landscape and urban Planning</i> 147: 38-49. • Chelleri L, Baravikova A. 2021. Understanding of urban resilience meanings and principles across Europe. <i>Cities</i> 108: 102985.
May 18		Case study proposal
Mar 25	Subject Literature	<p>[Application] Resilience in urban planning</p> <ul style="list-style-type: none"> • Sharifi A, Yamagata Y. 2018. Resilience-oriented urban planning. Chapter 1 in Yamagata Y, Sharifi A, eds. <i>Resilience-Oriented Urban Planning: Theoretical and Empirical Insights</i>. Springer, Cham.
June 01	Subject Literature	<p>[Application] Resilience in urban design</p> <ul style="list-style-type: none"> • Quigley M, Blair N, Davison K. 2018. Articulating a social-ecological resilience agenda for urban design. <i>Journal of Urban Design</i> 23(4): 581-602. • Liao K-H, Le TA, Nguyen KV. 2016. Urban design principles for flood resilience: Learning from the ecological wisdom of living with floods in the Vietnamese Mekong Delta. <i>Landscape and Urban Planning</i> 155: 69-78.
June 08		Case study presentation & concluding discussion

ASSESSMENT SCHEME

30% Literature summary & questions

To facilitate class discussion, each student is required to present a summary of, along with questions arising from, one of the papers required to read for the week. The summary should include—but not limited to—(1) the aim of the paper, (2) the structure/organization of the paper, (3) key concepts and/or keywords, and (5) your reflection on the paper. Please note: The purpose of the summary is to help you and your classmates to better comprehend the paper, so it needs to be structured. It should NOT be written as an essay. Utilize bullet points and have clearly and appropriately titled sections (and even sub-sections) to facilitate reading. The summary and questions should be printed out on A4 papers to disseminate to the class.

50% Case study

Each student should choose a particular system and discuss its resilience to a particular type of environmental change. Students should start to plan for the case study as early as possible in the semester. On April 20, each student should present the proposal of the case study. The proposal should include the analytical framework, with which the resilience of the system in question is analyzed. A second presentation on the case study proposal is scheduled to be on May 18 to make sure that there is progress. The final deliverable of the case study is a 25-minute PowerPoint presentation to be carried out on June 08. No written paper is required.

20% Class participation

Since this is a seminar course, class participation is a must. Class participation is in the form of active involvement in discussion, including raising questions, answering questions, and responding to others' comments.