



TEL AVIV אוניברסיטת  
UNIVERSITY תל אביב

# Full Syllabus



## **"not Noah's Ark" - Urban resilience in the 21st century**

**Instructor: Dr. Orli Ronen**

**Course number:** 0920.4041

**Semester:** Summer

**Academic year:** 2024-2025

**Credit hours:** 2

### **Lecturer information**

**Office hours:** by appointment

**Phone:** 0507470077

**Email:** orlironen@gmail.com

### **Course description**

At the beginning of the third millennium, more than 50% of the population lives in urban areas. By 2020, 75% of the world's population will be urban; In 135 metropolitan areas the number of residents will exceed 4 million.

Hurricane Katrina hit New Orleans in 2005, causing enormous damage to life and property. New Orleans was not prepared to deal with such a natural disaster, specifically, it was not prepared to deal with the disadvantaged population and many of them - never returned to the city once it was restored.

Climate change brings a new front to the city - coping with continuous stresses and shocks that directly affect the physical and human space.

The climate crisis is becoming part of the city's urban arena, according to IPCC's reports. Global warming is intensifying and in part inevitable. Accordingly, the economic, social and environmental impacts of climate change are intensifying, and scientific certainty is increasing regarding the link between warming and natural disasters, such as storms, floods and drought and the centrality of cities.

Most of the world's population lives in urban localities, especially in Israel, where almost 90% live in urban areas.

The city is by far the primary producer of greenhouse gases, although the urban area accounts for only about 2% of the Earth's surface. On the other hand, the city is also the first victim of climate change damage, its residents are exposed to increasingly severe health and environmental risks.

The course is designed to provide students with basic concepts and tools for understanding the issues and implications of climate change at the local level. The course presents the students with the challenges cities are facing, and the policy and planning frameworks that were created to deal with them.

**Course format/delivery:** lectures, discussions, 1 field trip, guest speakers, in- class exercise



# Full Syllabus



## Course policies

### Requirements:

**Attendance:** Attendance is 80% mandatory

### Grading:

A. Three assignments - 100%:

1. A one-page synopsis of a publication or an internet site on Urban Climate Adaptation – 25% - due August 11.
2. Field assignment – measurements of Urban Heat Island in Tel Aviv – 30% - August 6th + in class presentation of UHI measurements and analysis – August 18th.
3. Final Paper (individual) - Options for reducing Urban Heat Islands, 7-10 pages – 45%, due by September 29th.

**Course outline\*** Climate issues, in Israel and around the world, have undergone a transformation in the last 2 decades. From esoteric interests of a peripheral ideological group, they have become business models, policy frameworks and patterns of life and behavior, concerning governments, cities and people across the world.

The course will be divided into three parts. In the first part of the course the basic concepts will be introduced. This will include urban transformation and climate crisis, and implications for the local arenas. The second part will be dedicated to Israel's local government, analyzing changes in the environment, policy and local actions. The third part of the course will examine issues relating to the city level in terms of resilience building, countering shocks and stresses.

Date	Lesson	Lecture topic	Reading
28.7	<b>1</b> 9.15-10.30	Sustainable Development Cities, Expansion and Acceleration	Girardet, H (2012), Surviving the century: Facing climate chaos and other global challenges, chapter 5.
	<b>2</b> 10.45-11.45	Ecological Footprint of Cities	<a href="https://data.footprintnetwork.org">https://data.footprintnetwork.org</a> <a href="https://www.citycarbonfootprints.info/">https://www.citycarbonfootprints.info/</a>
30.7	<b>3</b> 9.15-10.30	Israeli Cities	Israel UNHABITAT report – Chap. 1-6 Challenges Experienced and Lessons Learned + 3.3, 3.4 Trends and future predictions of urban warming in four Israeli cities
	<b>4</b> 10.45-11.45	Hot and Dense – Cities and Climate Change – Impacts, Vulnerability and Readiness	Jabareen Y. (2013) Planning the Resilient city <a href="#">NDGAIN</a>
4.8	<b>5</b> 9.15-10.30	UCCRN – Climate Change and Cities Framework	<b>First assignment review</b> Climate Change and Cities – principles and case studies – ARC3, chapters 1-3
	<b>6</b> 10.45-11.45	“ cont.	
6.8	7-8 9.15 -11.45 Optional 11.45 -15.00	Half day tour of Tel Aviv + UHI measurements Professor Oded Potcher Tel Aviv Adaptation Plan – Climate Officer, City of Tel Aviv Yafo	



# Full Syllabus



11.8	<b>9</b> 9.15-10.30	Nature Based Solutions in a changing climate – principles and case studies	Climate Change and Cities – Coastal Adaptation – ARC3, chapter 8
	<b>10</b> 10.45-11.45	Higher and more extreme – Coastal Climate Policy – Guest speaker – Orly Babitsky, Haifa University	Climate Change and Cities – Coastal Adaptation – ARC3, chapter 9
13.8	<b>11</b> 9.15-10.30	Urban Resiliency – Regenerative Cities – Energy, Food, Water and Materials flow in cities in terms of mitigation and adaptation  SEACAP Assessments	Regenerative Cities, H Girardet
	<b>12</b> 10.45-11.45	Vulnerable Populations and the Community in a changing climate – Guest speaker	The Future we don't want, UCCRN, C40, 2018  Rodin, J. (2015), Cities in an Age of Crisis
18.8	13 10.00-12.00	UHI measurements Exercise	Student Presentations
20.8	14 10.00-12.00	TBA	

## Bibliography

**Betstill M., Bulkeley H. (2007), “ Looking Back and Thinking Ahead: A Decade of Cities and Climate Change Research”. Local Environment: The International Journal of Justice and Sustainability. 12(5):447-456.**

**C40 (2018). “The Future We don’t Want.” C40 Cities, Global Covenant of Mayors, Acclimatise, and UCCRN**

**Cohen, P., Cohen, S., Shashua-Bar, L., Tanny, J., & Potchter, O. (2023). “Outdoor thermal perception and adaptation of immigrants from cold climates to hot arid climate.” Building and Environment, 243**

**Díaz, Carlota García, David Zambrana-Vasquez, and Carmen Bartolomé, (2024) "Building resilient cities: A comprehensive review of climate change adaptation indicators for urban design." Energies 17.8**

**Davidson, Kathryn, et al. (2020) , "The making of a climate emergency response: Examining the attributes of climate emergency plans." Urban Climate 33**

**Georgescu M., Morefield P. E., Bierwagen B. G., Weaver C. P. (2013) “Urban adaptation can roll back warming of emerging Megapolitan regions.” PANS. early edition.1-6.**



TEL AVIV אוניברסיטת  
UNIVERSITY תל אביב

# Full Syllabus



**Girardet, H., (2008), "Cities People Planet: Urban Development and Climate Change." Wiley Publishers, 2nd Edition.**

**Girardet, H., (2010), "Regenerative Cities, Wiley Publishers." World Future Council.**

**Itzhak-Ben-Shalom, Hofit, et al. (2016), "Recent trends and future predictions until 2060 of urban warming in four Israeli cities employing the RegCM climate model." American Journal of Climate Change 5.4: 464-484.**

**Jabareen Y. (2013) "Planning the resilient city: Concepts and strategies for coping with climate change and environmental risk." Cities. 31:220–229.**

**Mandelmilch, Moshe, et al. (2020). "Urban spatial patterns and heat exposure in the Mediterranean City of Tel Aviv." Atmosphere 11.9, 963.**

**Ministry of Housing (2016), "Israel National Report for Habitat III"**

**Rodin. J (2015), "Cities in the Age of Crisis, Realizing the Resilience Dividend." Rockefeller Foundation**

**Ronen, O. eds. (2020), "Tel Aviv Yafo Adaptation Plan" Municipality of Tel Aviv Yafo**

**Rosenzweig, Cynthia, et al., eds. (2018), "Climate change and cities: Second assessment report of the urban climate change research network" – Chapters 1-3. Cambridge University Press**

**Stults, Missy, and Sierra C. Woodruff, (2017), "Looking under the hood of local adaptation plans: shedding light on the actions prioritized to build local resilience to climate change." Mitigation and Adaptation Strategies for Global Change 22.8: 1249-1279.**

**The City of Copenhagen (2012) Cloudburst Management Plan 2012. 1-28.**

**UN HABITAT (2011) Planning For Climate Change A Strategic, value-based approach for Urban Planners, 19-22, 27-33, 36-39.**