



TEL AVIV אוניברסיטת תל אביב  
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:** 2021-2022

**Credit hours:** 2

### Lecturer information

**Office hours:** by appointment

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**Textbooks:** *People, Climate, Cities*, H. Girardet

### 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 with 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 2014 reports. Global warming trend 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. A joint report by the World Bank and the Center for Mediterranean Integration (2011) states that the Mediterranean region is second in the world to be hit by climate change, where intense heat days are expected to rise by 200%. The report focuses on the City Vulnerability:

- Cliff collapse
- Coastal erosion
- Sea level rise
- Floods



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- Lack of water

In an analysis of impacts on key cities in the southern Mediterranean basin, editors state that over the next 20 years, cities are likely to suffer more than \$ 1 billion in damage from climate change. According to the Climate Change Information Center (ICCIC, 2013) in Israel, climate change could seriously affect more than five million Israelis due to rising sea level and river-level flooding. Tel Aviv, Acre, Haifa, Bat-Yam and other coastal municipalities are in real danger of rising sea level. Flooding streams could pose a high risk to 2.8 million Israelis.

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 basic concepts and problems, both in the world and in Israel, and the policy and planning frameworks that were created to deal with them.

In the course we will examine the possible and necessary assessments of cities in Israel in light of the future changes, both on the physical level and at the community and personal level.

The course will be held in cooperation with the **Tel Aviv-Jaffa Municipality**, one of the 100 cities chosen by the Rockefeller Foundation to develop a resilience strategy and action plan.

**Course format/delivery:** lecture, discussion, videos, 2 mini tours, guest speakers, in- class exercise

## Course policies

### **Requirements:**

**Attendance/lateness:** Attendance in person is mandatory in all classes and study tours

### **Grading:**

A. 2 class assignments - 70%:

1. Two-page case study of urban climate policy – 10%
2. Evaluation and Resilience Analysis of a local authority in Israel. The paper will include presentation of the case, plans, etc., and an assessment of local actions according to the parameters studied – groups of up to 4 students. – 40%
3. Field assignment – measurements of Urban Heat Island in Tel Aviv – 20%

B. Final test 30% - Final test: short answers and multiple choice

**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 the environmental and climate crisis, and implications for social, political and economic arenas with a special emphasis on the urban and 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.



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Date	Lesson	Reading	Lecture topic
4.7	1	People, Planet, Cities – chapter 1-4	People, Planet, Cities – the age of the Urban Anthropocene – Introduction to urbanism in the 21 <sup>st</sup> century, principles and history.
	2	TBA	Carbon Footprint of cities – basics of carbon footprinting, local and national
6.7	3	IPCC (2013). Climate Change 2013, chapter 11	Hot and Dense – Mitigation Climate Policy – Theory and scientific basis, IPCC reports and policy frameworks
	4	Bastill M., Bulkeley H. (2007) Looking Back and Thinking Ahead	Mitigation Policy – scenarios and strategies – principles of scenario building, specifically climate scenarios, strategy theory and research
11.7	5	TBA	New Orleans Case Study
	6	Solecki W., Leichenko R., O'Brien K. (2011) Climate change adaptation strategies and disaster risk reduction in cities	Adaptation Policy – principles and case studies - principles of adaptation, frameworks and policy
13.7	7	TBA	Hot and Dense – Climate Policy – Guest speaker – Chief Resilience Office, City of Tel Aviv Yafo
	8	Jabareen Y. (2013) Planning the resilient city	Adaptation Policy – assessments and strategies – student presentations
Tuesday 19.7	9	UHI measurements	
	10		
20.7	11	TBA	Reducing the Urban Heat Island – strategies and models
	12	People, Planet, Cities – chapter 9-12	Urban Resiliency – Regenerative Cities – Energy, Food, Water and Materials flow in cities in terms of mitigation and adaptation
Sunday 24.7	13	Study Tour	Kefar Saba Climate Readiness
25.7	14	People, Planet, Cities – chapter 14	Resilience Networks – Community action – concept of community resilience, review of Israeli experience
	15		Review and preparation for the test



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## **Bibliography**

**Balaban O. (2012) Climate Change and Cities : A Review on the impacts and policy responses. METU. JFA. 1:21-40.**

**Bastill 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.**

**Friend R. Jarvie J., Orleans Reed S., Sutarto R. Thinphanga P., Canh Toan V. (2014) Mainstreaming urban climate resilience into policy and planning; reflections from Asia. 7:6-19.**

**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.**

**IPCC (2013). Climate Change 2013: The Physical Science Basis. Chapter 11:990-991, chapter 12: 1064-1068.**

**IPCC (2013) Climate Change 2013 The Physical Science Basis Headline Statements from the Summary for Policymaker. 1-2.**

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

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

**Solecki W., Leichenko R., O'Brien K. (2011) Climate change adaptation strategies and disaster risk reduction in cities: connections, contentions, and synergies, Current Opinion in Environmental Sustainability.3:135-141.**

**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.**