TEL AVIV UNIVERSITY אוניברסיטת תל אביב

Full Syllabus

Course Title

Selected topics in Urban Geosciences

Lecturer

Dr. Shimon Wdowinski

Semester

First

Course requirements

Final grade components

Geosciences in the News 10%; Assignments (3 x 18% each) 54%;
Topical presentation 36%; Total 100%

Course schedule

Class no. / Date	Subject and Requirements (assignments, reading materials, tasks, etc.)
1. 26/10/22	Introduction
2. 2/11/22	Buildings and infrastructure stability – Subsurface properties and building/infrastructure foundation design
3. 9/11/22	Buildings and infrastructure stability – Land movements – monitoring (GNSS, InSAR) and causes
4. 16/11/22	Buildings and infrastructure stability – Land movement impact on buildings and infrastructure – Fast (earthquakes, landslides, sinkholes) versus slow (subsidence)
5. 23/11/22	Buildings and infrastructure stability – Catastrophic collapses – Case studies: Surfside, Mexico City, Archaeo-seismicity
6. 30/11/22	Urban water – Natural vs. engineered water flow; water sources
7. 7/12/22	Urban water – Water supply and sewage systems: design, aging/leakage
8. 14/12/22	Urban water – Wastewater and drainage; Water quality and treatment
9. 21/12/22	Urban water – Urban flooding – Case studies: Tel Aviv, New Orleans, Miami
10. 28/12/22	Urban atmosphere – Air quality – Urban pollution; Case study: Los Angeles in the 1970s
11. 4/1/23	Urban atmosphere – Temperature - Urban heat island, extreme heat/cold conditions – Case study: Tel Aviv
12. 11/1/23	Urban atmosphere – Sandstorms and wildfires; Case studies: Beer Sheva, Portland (Oregon)

Full Syllabus

13. 18/1/23	Summary and Future trends

Required course reading

Students will be assigned to read peer-reviewed papers on each topic

Optional course reading

Comments

The course will be taught in English