

 <p>CLIMAGEN Gdansk poster - (source: <i>Climagen Gdansk</i>)</p> <p>Heweliusza Street - (source: <i>googlemaps</i>)</p> 	<p>Term: 2 sem. (summer)</p>	<p>Virtual tour–based workflow for digital simulation</p> <p>/</p> <p>Elective design II</p>	<p>ECTS: 5</p>
	<p>Type of studies: MSc in Arch.</p>		<p>Year: 2025/2026</p>
<p>Department of Housing Architecture & DALab</p>			
<p>Seminars & assignments: 60 h Teacher: Francesca Galasso, Ph.D., University of Pavia & additional teaching staff from Gdańsk Tech, Poland</p>			
<p>Brief description of the subject:</p> <p>The elective design course focuses on the post-production and interpretative enhancement of 360° panoramic photographs through the development of interactive virtual tours. Building on a set of pano360 captured on-site, students will create a navigable tour enriched with semantic annotations (hotspots, labels, thematic categories, and interpretative layers), translating urban and architectural analyses into an immersive, well-structured, and easily shareable output.</p> <p>The course also provides tools and methodological guidance to help students become autonomous in planning and carrying out additional 360° acquisitions, to document and evaluate how the case study changes under different climatic and environmental conditions. These time-based observations will be integrated into the virtual tour through semanticization strategies that explicitly incorporate the temporal dimension, enabling comparisons across different dates and supporting an evolutionary reading of space.</p> <p>This is the complementary course to the “Virtual Tour and Building Techniques for a Sustainable City” course (Complementary Elective Design II). The course is linked to the CLIMAGEN Horizon project and Urban ElementREE DUT project.</p>			
<p>Goals:</p> <p>The course addresses key issues in architecture and urban planning through the lens of cultural heritage at the urban scale, focusing on how the digital era reshapes observation, interpretation, and communication. By working on a real case study in Gdańsk, students will use immersive 360° media to identify criticalities, opportunities, and future trajectories of urban spaces, while learning how digitization can support preservation, enhancement, and informed planning—also accounting for climatic/environmental variability over time.</p> <p>Academic / Cultural objectives</p> <ul style="list-style-type: none"> • Understand the main issues and challenges of cultural heritage at the urban level (identity, conservation, transformation, accessibility, public value) in the contemporary digital context. • Recognize and discuss key heritage-related problems and opportunities in Gdańsk, supporting the development of a more conscious and effective strategy for conservation, preservation, and enhancement. • Critically explore how digital environments (virtual tours, immersive visualization, multimedia content) can support heritage understanding, public engagement, and the communication of research content. • Promote a multidisciplinary mindset, teamwork, and critical thinking, including reflection on heritage routes and connected narratives within the city. <p>Operational objectives</p> <ul style="list-style-type: none"> • Develop the ability to author interactive virtual tours as a structured digital deliverable (scene organization, navigation logic, interface settings, publishing/sharing). • Implement a coherent system of semantic annotation on panoramic scenes (hotspots, labels, thematic categories, interpretative layers) to translate analyses into a navigable knowledge structure. • Enable student autonomy in planning and conducting additional 360° acquisitions (during May), ensuring comparability across dates through protocols and documentation. • Integrate time-based observations into the tour (temporal tagging, comparative logic, date-based layers/variants) to support analysis of climatic/environmental impacts and evolving spatial conditions. • Deliver a final interactive prototype suitable for academic critique and dissemination, demonstrating methodological clarity, readability, and communicative effectiveness. 			



Block course:

online lectures (Wednesdays) 18.03.2026 and from 15.04-27.05. 2026 + intensive workshop (from 24.03 - 27.03 2026 - 4 days) in Gdansk (group of max 15 students)

The course is structured to be done in parallel with the one entitled " Virtual Tour and Building Techniques for a Sustainable City"

Content of the course:

Seminars (online):

1. Lecture / Introduction to the virtual tour–based workflow: from pano dataset to semantic, interactive output
2. Lecture / Course overview and workflow

Practice (online):

3. Lecture / Street-space analysis and identification of criticalities, values, and potential transformation areas
4. Practice / 360° acquisition protocol
5. Practice / First data organization and handover

Seminars (online):

6. Lecture / Post-production of 360° panoramas
7. Practice / Virtual tour software authoring: structure and navigation
8. Lecture + Practice / Semanticization methods
9. Practice / Trial prototype development

Seminars (online):

10. Practice + Review / Preparation for autonomous acquisition
11. Online Review / Integration check
12. Online Review / Time-based semanticization
13. Online Review / Prototype refinement and publishing
14. Final presentation of outcomes

Educational outcomes:

By the end of the course, students will be able to develop a publishable interactive virtual tour from a 360° panoramic dataset, applying post-production standards and a coherent tour structure. They will be capable of semanticizing panoramic scenes to translate urban/architectural analyses into readable interpretative layers, and of planning and carrying out an autonomous 360° acquisition that can be compared with the baseline dataset. Finally, they will be able to integrate time-based and climate/environmental observations into the tour through explicit temporal tagging and comparison logic, producing an immersive output suitable for academic review and communication.

Remarks:

This is hands-on course. Elementary computer skills are useful as well as a laptop per pair. The idea is to integrate daylight analysis into the students' projects.

Methods:

The course adopts a blended, project-based approach combining short online lectures with guided software demonstrations and hands-on production. April sessions are structured as a supervised trial to establish the workflow and standards, while May sessions function as review-oriented studios, focusing on feedback, troubleshooting, and refinement after students complete an autonomous 360° acquisition. Learning is reinforced through iterative critiques, peer discussion, and final public presentation of the digital prototype.

Learning Outcomes:

Upon successful completion of the course, students will be able to critically interpret urban space through immersive media and articulate analytical narratives grounded in cultural-heritage perspectives. They will be able to structure and justify a coherent semantic framework that translates observations into communicable categories, supporting comparative readings and decision-oriented discussion.

Prerequisites:

Great willingness for multidisciplinary approaches, openness for research based, innovative structural design, advanced skills in using digital tools and ability of working in a digital environment.

Assessment Methods and Criteria:

Assessment Methods and Criteria: Evaluation of the final study and task.

Study Materials:

Reading List, excerpts of lectures, definitions etc. will be provided to students in digital format with respect to the topic of the seminars.