



Term: <b>2 sem.</b> (winter)	<b>Elective design:</b> <b>Interdisciplinary approach</b> <b>towards environmentally friendly</b> <b>design</b>	ECTS: <b>2</b>
Type of studies: <b>MSc in Arch.</b>		Acad Year: <b>2022/23</b>

**Department of Urban Architecture and Waterscapes**

Teachers: Joanna Badach, Ph.D. Eng. Architect, Tomasz Majchrzak, Ph.D. (Faculty of Chemistry), Prof. Lucyna Nyka, Ph.D., D.Sc., Architect

**Brief description of the subject:**

Providing the proper quality of the urban environment is an important part of urban planning. The aim of the course will be to implement an interdisciplinary approach towards the examination of environmental parameters in the urban space using the environmental analysis tools (**air quality, noise and microclimate measurements**) and the Geographic Information System (GIS) tools for field data collection (**field data applications, conducting users' perception study, creating interactive maps**). We will work in cooperation with the Faculty of Chemistry, Gdańsk University of Technology in order to use specialist tools and procedures to examine air quality noise levels and microclimatic conditions. We will also use latest GIS solutions and dedicated applications to map spatial barriers or users preferences regarding urban space. The data collected during field work with the use of various methods and techniques will be applied to conduct environmental, urban and architectural analysis, which will allow for a more in-depth examination of the characteristics of the existing space. It will also make it possible to formulate design solutions adopted to take better account of the local conditions shaping the quality of the urban environment.

**Objectives and learning outcomes:**

Familiarisation with the basics of environmental analysis, field data collection and the use of GIS and BIM tools for designing urban space in the context of environmental quality, and the health and safety of the urban inhabitants.

**Content:**

The course consists of the following phases:

1. Familiarising with the concept of space safety for the users and the environment. The role of environmental pollution monitoring.
2. Collecting field environmental data. Methods of environmental sampling.
3. Using dedicated application to conduct site inventories and for the purpose of the urban space users' perception study.
4. Processing and visualising collected field data using GIS tools and statistical methods.
5. Integrating BIM and GIS environments to develop spatial planning guidelines based on the collected experimental and field data.

Please note that the classes will be held on Tuesdays from 11.15 a.m. to 1p.m.