COURSE DESCRIPTION CARD - SYLLABUS

Course name
Digital Spatial Planning [S2Arch2>CwPP]

Course

Field of study
Architecture

Year/Semester
1/2

Area of study (specialization)
–

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

- the student has structured, theoretically based general knowledge covering key issues in the field of urban design and spatial planning, - the student has extensive knowledge necessary to understand the social, economic, legal and non-technical conditions of spatial planning, - the student is able to critically analyze the functioning of and evaluate existing planning solutions on a municipal scale, - is able to cooperate and work in a group, assuming different roles in it, - correctly identifies and resolves dilemmas in the scope of various spatial situations on an architectural and urban scale.

Course objective

As part of the course, students become familiar with information techniques used to prepare planning documents - these issues are presented in both theoretical and practical-design terms. The aim of the lectures is to present the most important issues related to the amendment of the Act on PIP, as well as to familiarize students with software and IT tools used in spatial planning practice. The subject will present issues related to the development of General Municipal Plans (POG) and ways of using digital tools in their preparation.

Course-related learning outcomes

Knowledge:
Knows and understands the rules of integrated spatial planning and spatial policy tools;
Knows and understands the provisions of local spatial development plans to the extent necessary for architectural design;
Knows and understands advanced analysis methods, tools, techniques and materials necessary to prepare design concepts in an interdisciplinary environment, with particular emphasis on inter-industry cooperation;
Knows and understands the interdisciplinary nature of urban design and the need to integrate knowledge from other fields, as well as its application in the design process in cooperation with specialists in these fields.
Knows and understands the advanced theory of architecture and urban planning useful for formulating and solving complex tasks in the field of spatial planning, as well as development trends and current directions in urban design;
Knows and understands the role and importance of the natural environment in spatial planning and the need to shape spatial order, sustainable development, and the subject of threats to the environment and cultural landscape; Knows and understands issues related to spatial planning, such as technical infrastructure, communication, natural environment, landscape architecture, economic, legal and social conditions
Knows and understands the social, economic, ecological, natural, historical, cultural, legal and other non-technical conditions of engineering activities and sees the need to take them into account in spatial planning;
Knows and understands technical and construction regulations in the field of spatial planning;

Skills:
Is able to prepare planning studies on spatial development and interpret them to the extent necessary for designing on an urban and architectural scale;
Is able to critically analyze conditions, including the valuation of the state of land development and development;
Is able to formulate conclusions for spatial planning, forecast the processes of transformation of the settlement structure of cities and villages, and predict the social effects of these transformations;
Is able to assess the usefulness of advanced methods and tools for solving simple and complex engineering tasks, typical of spatial planning, and select and apply appropriate methods and tools in design;
Is able to communicate using various techniques and tools in a professional and interdisciplinary environment to the extent appropriate for urban design and spatial planning;
Is able to formulate new ideas and hypotheses, analyze and test novelties related to engineering problems and research problems in the field of urban design and spatial planning;
Is able to integrate advanced knowledge from various areas of science, including spatial management, when solving complex engineering tasks;
Is able to perceive the importance of non-technical aspects and effects of the architect's design activity, including its impact on the natural environment, and take responsibility for technical decisions made in the environment and for passing on the natural heritage to future generations;
Is able to perceive systemic and non-technical aspects, including environmental, cultural, artistic, economic and legal aspects in the process of urban design and planning with a high degree of complexity;
Is able to use appropriately selected advanced computer simulations, analyses and information technologies supporting urban design, as well as evaluate the obtained results and their usefulness in design and draw constructive conclusions;
Is able to prepare and present a presentation devoted to the detailed results of the implementation of the engineering design task using various communication techniques, including one formulated in a generally understandable manner;
Is able to appropriately apply professional and ethical standards and rules and legal regulations in the field of spatial planning.

Social competences:
Is capable of speaking and presentat publicly;
Is capable of taking responsibility for shaping the natural environment and cultural landscape, including the preservation of the heritage of the region, country and Europe.
Is capable of formulating and transfer information and opinions to the society on the achievements of architecture and town planning, their complex conditions and other aspects of the architect's activity;

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

1. Lectures:
Lectures end with a written assessment - in the form of a final colloquium or your own work in text and graphic form (poster). There are two dates for the assessment, with the second date being a make-up date.
Summary assessment:
A grade for the final task. To obtain a positive grade, you must obtain at least 60% of the points available for the assignment.
Assessment scale adopted: 2.0; 3.0; 3.5; 4.0; 4.5; 5.0
2. Project:
Projects end with a assessment - in the form of a final colloquium or a study of the final task assigned by the Lecturer. There are two dates for the assessment, with the second date being a make-up date.
Formative assessment:
Active participation in laboratories confirmed by attendance at least 2/3 of classes.
Appointed grading scale: 2.0; 3.0; 3.5; 4.0; 4.5; 5.0
Summary assessment:
A grade from the final assignment. To obtain a positive grade, you must obtain at least 60% of the points available for the assignment.
Appointed grading scale: 2.0; 3.0; 3.5; 4.0; 4.5; 5.0
Obtaining a positive grade from the module depends on the student achieving all the recorded learning outcomes.

Programme content

The classes cover issues related to formal, legal and organizational changes in the spatial planning system in Poland. In relation to new legislative conditions, attention is focused particularly on issues related to: planning legislation in the light of the new act, new planning tools and procedures, the role and scope of application of digital techniques in spatial planning, as well as the presentation of good planning and urban practices at the municipal level.

Course topics

I. Lectures:
1. Introduction - the role of the general plan of the commune in formulating planning arrangements after the amendment of the Act on Spatial Planning and Development
2. Analysis of selected arrangements of the general plan of the commune - planning zones, development parameters
3. Analysis of selected arrangements of the general plan of the commune - areas of development supplementation, city centre area, justification
4. Analysis of selected arrangements of the general plan of the commune - procedural issues, including a discussion of giving opinions and agreeing, statutory consultations and forms and methods of presenting general plan of the commune
5. Application of geographic information systems (GIS) in spatial planning under new legal regulations
6. Creation of spatial data for spatial planning acts - discussion
7. Creation of spatial data for spatial planning acts on the example of general plan of the commune
II. Project classes in computer rooms include the following topics:
- creating, updating and sharing sample spatial data for the local spatial development plan using open GIS software (duration 4-5 weeks),
- creating, updating and sharing sample spatial data for the commune's general plan using open GIS software (duration 4-5 weeks),
- practical review and validation of spatial data for spatial planning acts (duration 4-5 weeks).

Teaching methods

1. lecture / problem-based lecture / lecture with multimedia presentation.
2. laboratories in computer rooms - work in the QGIS environment.
3. eKursy (a system supporting the teaching process and distance learning).

Bibliography

Basic:
https://www.mpu.pl/mim/wortals/mpu/news,9620/plan-ogolny-miasta-poznania,237536.html
https://www.mpu.pl/mim/wortals/mpu/po-co-robione-sa-plany,p,57013,57014.html?wo_id=1764
https://www.mpu.pl/mim/wortals/mpu/dane-przestrzenne,p,57013,66975.html?wo_id=1764
https://sipaplikacje.geopoz.poznan.pl/raporty/report?reportId=2000056

Additional:
Daniel, C. (2024). Digital Planning Practices-A multi-stage study on current approaches and future prospects for the use of analytics in urban planning practice (Doctoral dissertation, UNSW Sydney).
Daniel, C., Wentz, E., Hurtado, P., Yang, W., & Pettit, C. (2024). Digital technology use and future expectations: a multinational survey of professional planners. Journal of the American Planning Association, 90(3), 405-420.
Shafik, W. (2025). Digital twins tools and technologies. In Digital Twins for Smart Cities and Villages (pp. 55-80). Elsevier.
Tappert, S., Mehan, A., Tuominen, P., & Varga, Z. (2024). Citizen participation, digital agency, and urban development.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	20	1,00