

SCOPE OF EXAMINATION TOPICS

MASTER'S DEGREE EXAMINATION

field of study: ARCHITECTURE

1. ARCHITECTURAL AND URBAN DESIGN

SUSTAINABLE INDUSTRIAL DESIGN

1. Discuss which elements of site development and infrastructure have the greatest impact on the efficient, safe, and sustainable operation of modern industrial facilities.
2. Discuss the impact of the functional layout and the organization of production processes on the spatial configuration and the choice of structural system for an industrial facility.
3. Discuss how to design workspace in an industrial facility so that it simultaneously meets production requirements, ensures safety, and supports employee comfort and well-being. Highlight the role played in this context by social and sanitary facilities, as well as access to natural light.
4. Discuss the issues involved in designing an industrial facility with a net-zero energy balance. What challenges, limitations, and opportunities are associated with achieving such a goal during the design process and the building's subsequent operation?
5. Will the factory of the future still be a building, or rather a dynamic system capable of continuous transformation in response to changes in technology, market conditions, and user needs?
6. Will the boundary between factories, offices, and research-and-development centers become increasingly blurred? How will this affect the architecture of industrial facilities?

ARCHITECTURAL DESIGN OF COMPLEX-FUNCTION BUILDINGS, INTEGRATED DESIGN

7. Discuss the history of hospital care. The evolution of the form and function of hospital buildings.
8. Describe the functional layout of the operating suite.
9. Discuss the design principles for selected rooms and spaces in healthcare buildings.
10. Explain the concepts of evidence-based design and patient-centered design.
11. List and briefly characterize selected examples of healthcare facilities.
12. Discuss the issues involved in designing residential architecture for seniors.
13. Discuss the potential of using new technologies in design for aging societies.
14. Discuss the research methods used in the design of healthcare facilities.
15. Discuss the principles of universal and inclusive design in the shaping of public facilities with complex functions.
16. Discuss the design principles for complex-function public buildings dedicated to culture and the arts, using a museum, art gallery, or theater as an example.
17. Discuss the principles governing the functional and spatial layout of complex-function public buildings dedicated to education, using a kindergarten, school, library, media library, or campus as an example.
18. Discuss the design principles for public-use facilities with complex functions involving temporary accommodation and food service, using the example of a hotel, guesthouse, collective accommodation facility, or food service establishment.

19. Characterize contemporary trends in the design of public utility buildings with complex functions. Provide examples of completed projects.
20. Describe the stages of the integrated design process.
21. Discuss the application of integrated design using a collective residential building as an example.
22. Provide a definition of integrated design (origins, stages, and areas of integrated design, as well as potential risks).
23. Discuss the concepts of sacrum and profanum in integrated design.

REGENERATIVE URBANISM, SPATIAL PLANNING, DIGITALIZATION OF SPATIAL PLANNING

24. The concept of the regenerative city in contemporary perspective.
25. Urban regeneration: guidelines and strategic directions.
26. Fundamental tools for public consultation.
27. Digital twin of a city: concept and application.
28. Discuss the factors that shape the perception of time in urban space and influence its evolving aesthetics.
29. Discuss the key functionalities of a city digital twin for effectively supporting the processes of planning, designing, implementing, and managing urban space.
30. Discuss the principles of integrated spatial planning and contemporary tools for shaping spatial policy.
31. Discuss modern analysis methods, tools, techniques, and materials essential for preparing urban design projects and planning studies within an interdisciplinary professional environment.
32. Amendment to the Act on Spatial Planning and Development in Poland – key issues.
33. Revitalization and spatial planning – thematic links and legal conditions.

INNOVATICS

34. Innovative technological solutions in architecture
35. Forms of intellectual property protection that protect various aspects of a product (patent, utility model, industrial design)

2. CONTEXT

HERITAGE PROTECTION, CONSERVATION OF HISTORIC MONUMENTS

36. What does the conservation of historic monuments involve? The aims and principles of conservation practice.
37. What does the restoration of historic monuments involve, and what are its basic requirements? What preparatory work must precede restoration work?
38. The two main doctrinal principles concerning the post-war reconstruction of Polish cities, as formulated by Jan Zachwatowicz.
39. Provide a definition of a historic monument and the methods used to protect it. What does this encompass, and what is the scope of the measures involved?
40. The main principles of the reconstruction of Western European cities destroyed during World War II.
41. The Venice Charter of 1964 and the main principles of conservation.
42. The reconstruction of cities in Poland after 1956, illustrated by selected examples.
43. The sequence of procedures in the conservation and restoration of historic buildings.

CLIMATE CHANGE ADAPTATION

44. Explain the concepts of climate change mitigation, climate change adaptation, and urban resilience.
45. Discuss the key climate and environmental threats facing cities and the role of blue-green infrastructure in climate change adaptation.

SPECIALIST LECTURE

- 46. Discuss the interdisciplinary nature of architectural and urban design.
- 47. Discuss design issues that require interdisciplinary coordination in architectural design.
- 48. Outline the main principles of acoustic design for concert halls and opera houses—including potential acoustic defects and design guidelines for stages and auditoriums.
- 49. Outline the main principles of acoustic design for multi-purpose halls.

ADVANCED DESIGN TECHNOLOGIES

- 50. Describe the main assumptions of the open BIM concept, including its data exchange standards.
- 51. BIM–GIS integration: scope of application and data exchange formats.
- 52. The IFC model as a database of information about a building asset.
- 53. Describe the objectives, applications, and benefits of using the BIM methodology throughout the life cycle of a building asset.
- 54. Characterize the documents and information requirements used in the BIM process, as well as their role in the organization and delivery of a construction project.
- 55. Discuss information and document management in the BIM process using a Common Data Environment (CDE).
- 56. Discuss the concept of Heritage BIM (HBIM) and its significance for heritage conservation and design.
- 57. How does the combination of laser scanning, photogrammetry, and manual measurements affect the quality and completeness of heritage documentation?
- 58. Discuss the concept of a point cloud, the stages of its processing, and its use in design and heritage conservation.

ART HISTORY, APPLIED ARTS

- 59. Discuss examples of the move away from the image in post-World War II artistic movements and list the names of these movements and their representatives.
- 60. Discuss the main feminist theories and their influence on art in the 20th and 21st centuries.

PSYCHOLOGY OF PERCEPTION

- 61. Discuss cognitive processes, representations, and classifications of knowledge.
- 62. Visual illusions: theoretical foundations and mechanisms.

INVESTMENT COST MANAGEMENT

- 63. Cost estimation methods and option analysis in the design process.
- 64. Project delivery models and construction contracts.

THEORY AND RESEARCH METHODS IN ARCHITECTURAL DESIGN

- 65. Discuss the research methods and techniques used in the preparation of a master's thesis.
- 66. Discuss selected research methods and techniques used in Architecture courses.
- 67. Principles for carrying out a survey involving measurements and drawings of historic buildings.
- 68. Architectural investigations in conservation practice: role and principles of execution.

STRATEGIES FOR BUILDING A CAREER IN ARCHITECTURE

- 69. Discuss the key differences between B2B and B2C markets, taking into account customer needs, differences in relationship management, and the role of emotions in purchasing decisions in both types of markets.
- 70. Discuss methods of building a personal brand in the architectural profession.

PHILOSOPHY AND AESTHETICS

71. The importance of philosophical reflection in architectural design.
72. Contemporary philosophical movements that may be useful in architectural and urban planning practice (personalism, existentialism, hermeneutics, postmodernism).