

Type of programme: full-time master 3-semester with no of hours /week and ECTS

Field of education: **Spatial Planning**, specialization: **Urban Design in Spatial Planning**

No.	Course	Sem. I				Sem. II				Sem. III			
		l	e	p	ECTS	l	e	p	ECTS	l	e	p	ECTS
l - lecture, e - exercises, p - project, E - exam													
General courses													
1	Facultative class: Conflict Situations – Possibilities of Their Development, Negotiations					2			2				
2	Facultative class 2: Public Relations and Advertising in Contemporary World									2			2
3	Facultative class 3					1			1				
4	Professional foreign language										2		1
Basic courses													
5	Hazards and Protection of the Earth Surface /E	1		2	4								
6	Environmental Monitoring	2			3								
7	Spatial Management in Rural Areas /E	1		2	4								
8	Landscape Planning	1		2	4								
9	Theory of Organisation and Management					2			2				
Profiled courses													
10	Environmental Development Planning and Management in the EU	1			2								
11	Regional Politics and European Law in Spatial Management /E	2			2								
12	Town Planning in European Union Countries		2		2								
13	Territorial Marketing									1			1
14	Business Models									2			2
15	Regional Planning	1		1	2								
16	Legislative Techniques in Planning					2			2				
17	Revitalization of Devastated Areas	1		2	3								
18	Modelling in Spatial Management							1	2				
19	GIS Technologies	1		2	4								
20	Cartographic Modelling /E					1		2	3				
21	Remote Sensing in Spatial Management							2	2				
22	Facultative class 4					2			2				
23	Facultative class 5					1			1				
Specialization courses													
24	Building Information Modelling (BIM)									1		1	3
25	Local Spatial Development Plan					1		1	2				
26	Residential Functions in Urban Development /E					1		3	3				
27	Urban Design Project for Multifunctional Area /E					1		2	3				
28	Town Physical Development Planning					1	1	2	4				
29	Diploma Seminar (for UWPP specialization)						1		1		1		1
30	Diploma work												20
TOTAL		11	2	11	30	15	2	13	30	6	3	1	30

Courses descriptions

General courses	
<p>Facultative class 3: Ecoinnovations in Companies</p>	<p>Effects of eco-innovative activities: impact on the competitive position of enterprises, e.g. in the form of reducing energy consumption costs, improving working and living conditions, reducing pollutant emissions. Pro-ecological activities as an important problem due to the still unsatisfactory condition of the environment in Poland, e.g. air and water pollution. Adaptation to EU regulations and initiatives to improve the quality of the natural environment, reduce the emissions of the economy, increase the share of renewable energy and build a bioeconomy. Activities in the area of resource-efficient and less emission production processes, e.g. in industry, transport, construction, reducing greenhouse gas emissions. A strategy of values, following pro-ecological values at individual stages of business processes (production, logistics, waste management, etc.) and cooperation with other entities (e.g. suppliers), and also including care for the natural environment in the mission. Synergic interaction of different types of eco-innovation and their environment; building a competitive advantage ensuring appropriate working and living conditions, resulting, inter alia, from maintaining the good condition of the natural environment with the simultaneous development of enterprises.</p>

	<p>Facultative class 3: Environmental economics</p>	<p>Connecting the socio-economic system with the environment, economic and social effects of environmental pollution, costs of use and environmental protection, effects of implementation of projects in environmental protection, methods of assessing the effectiveness of protective measures, environmental protection policy, legal and administrative instruments in environmental protection, economic instruments in protection environment, financing of environmental protection projects, social instruments in environmental protection, basics of environmental management, environmental management strategies in the enterprise and the commune, implementation of environmental management systems in the enterprise and commune.</p>
<p>Basic courses</p>		
	<p>Hazards and Protection of the Earth Surface</p>	<p>Lecture: Legal basis for the protection of the Earth's surface (the environmental protection law). Threats to the Earth's surface with a division on the scale of: global threats, regional (European) threats, local threats (occurring in Poland). Case studies of local threats in Poland. Causes and consequences of threats. Ways to protect endangered resources, including through legal and administrative instruments, financial resources, scientific and research activities, as well as through appropriate spatial planning. Ways of reducing the effects of the above-mentioned threats. Highlighting the role of planners and spatial planning in the protection of the Earth's surface. Project: Selected threats to the Earth's surface recognized as the most important in the world. Interpretation of threats to the Earth's surface with a division on a global and local scale. Interconnection of global and local threats. Causes, consequences, methods of protection against the above-mentioned threats, as well as ways of eliminating them. The importance of spatial planning in the protection of the Earth's surface. Current challenges of spatial planning in the context of Earth protection. Practical solutions related to the protection of the Earth's surface used on a local scale in workplaces or institutions.</p>
	<p>Environmental Monitoring</p>	<p>Discussion of the principles of monitoring the qualitative and quantitative state of the environment in Poland, primarily based on the State Environmental Monitoring (SEM) system in relation to the European Commission. In this regard, the sources and causes of environmental pollution, its current qualitative and quantitative status as well as quality indicators are discussed. The lectures include: Fundamentals of environmental monitoring: definitions, legal regulations, goals and tasks, operational diagram, measurement network, quality indicators and evaluation / classification system. Organization of the monitoring of the natural environment in Poland in the national, regional and local terms. Monitoring of air quality (the amount and variability of emissions and immissions in Poland against the background of Europe, national network of pollution background assessment according to international programs - EMEP, GAW / WMO), air protection program. Monitoring of the quality of surface and underground waters and the Baltic Sea. Soil and land monitoring. Nature monitoring (Monitoring of Polish Birds, Monitoring of species and natural habitats, Monitoring of forests, Integrated assessments of the state of the natural environment) in connection with European monitoring. Monitoring of the acoustic climate. Ionizing radiation monitoring. Monitoring of electromagnetic fields. The results of the SEM are the basis for the presentation of the qualitative and quantitative state of individual components of the environment. There are also presented statistical methods of processing the results of observations and basic legal requirements concerning the quality of surface water, groundwater, rainwater, air and soil.</p>
	<p>Spatial Management in Rural Areas</p>	<p>Lecture: Selected agricultural and arrangement works as an element of shaping space in rural areas in Poland and in selected European Union countries. The role of the local spatial development plan in the area subject to arrangement and agricultural works. The process of dividing agricultural real estates, merging and dividing real estates as well as merging and dividing real estates as tools for shaping land for development (mainly housing) in areas excluded from agricultural and forestry production. Fundamentals of forest land management, in particular the forest management plan and the simplified forest management plan, regulation of the agro-forest border. Project: The use of Project-Based Learning (PBL), where students develop comprehensive design solutions for the research area, both taking into account the ownership and spatial structure of plots, as well as landscape aspects, analyzed for the same research area within the subject of Shaping landscape, using the additional knowledge gained in other subjects and during the meeting with residents and field inventory. The detailed content of the project is: 1. Analysis of the ownership, spatial structure and use of registration plots on the basis of materials obtained from geodetic and cartographic resources. 2. Initial assessment of the current state. 3. Getting to know the problems of spatial management in a selected commune during a meeting with employees of the commune office, councilors and other interested people. Inventory of the use, investment status and development of research facilities in the field. 4. Development of an up-to-date map of use and photographic documentation based on field work. 5. Development of the concept of the functional and spatial division project for the selected area (precinct), taking into account the available data and local needs. Proposing remedial tools for the spatial structure and governance structure that will allow for rational, respecting the principles of sustainable development, development of the area. 6. Discussion on the solutions used in the projects in a group of students, and then presentation of the projects and discussion with the residents. Participation of students in meetings with residents not only allows for the verification of design solutions with expectations,</p>

	Landscape Planning	Factual content - series of lectures: The definition and the scope of the notion of the term "landscape" The protection, management and planning of the landscape The landscape and legal regulations The tools of the Landscape Act The landscape as a heritage How to read the landscape. How to build up local identity, The cultural landscape of rural areas in Poland Historical cultural landscapes of the 10th to 16th Centuries Historical cultural landscapes of the 17th and 18th Centuries Cultural landscapes of the 19th and 20th Centuries The green infrastructure of cities The structure and organization of the landscape How landscape systems function Shaping the landscape in European Union countries Assessment test Factual Content - design classes: As part of the project, the students draw up a landscape study of a chosen area. They carry out an analysis of selected documents with regard to principles of landscape protection, landscape planning and landscape management. They carry out an inventory of the landscape resources through fieldwork. The students identify and analyze landscape values (historical and cultural values, natural environment values, aesthetic and visual values, symbolic values of the landscape). They work out guidelines for shaping the landscape of the territory.
	Theory of Organisation and Management	Basic concepts: the essence of management, types, functions of management, management and leadership. Evolution of organisational and management theory. Planning, types of planning (strategic, tactical), business plans, causes of failure in planning: organizational structures - models and parameters of organisational structures. Human resources management - hiring employees, motivating employees. Case studies - successes and failures of managers in the management of companies.
Profiled courses		
	Environmental Development Planning and Management in the EU	1. First lecture. General introduction to the subject 2. Second lecture. Features of space in the EU 3. The third lecture. The structure of space in the EU 4. Fourth lecture. Economic rationale influencing management space in the EU 5. Fifth Lecture. The role of spatial planning as a control instrument development in the EU 6. Lecture six. The concept and structure of spatial management in the EU 7. Basic problems included in spatial management in the EU 8. Final test
	Regional Politics and European Law in Spatial Management	TUTORIALS: As part of the exercises, students prepare a report and a presentation on a selected topic related to planning at the voivodeship level, e.g. comparison of the documents of the applicable voivodeship development strategy and the design of the voivodeship development strategy, comparison of the development strategy of selected voivodeships, comparison of spatial development plans of selected voivodeships, comparison of the voivodeship spatial development plan and the voivodeship development strategy. The report should include, inter alia, the purpose of the work, the legal basis of the discussed documents, comparison of the structure and scope of the content of the documents, reference to the document implementation monitoring system, evaluation of cartographic and graphic studies being part of the documents.
	Town Planning in European Union Countries	A comprehensive analysis of urban regeneration and development projects from individual EU countries. The scope of analysis includes in particular the following issues: 1) Project initiation - reason/ basic objectives; 2) 'Actors' and their role; 3) Form of governance - complexity of structures/ interdependence/ cooperation/ coordination; 4) Urban design - links to city structure/ environmental/ historical conditions/ etc.; 5) Project implementation process - role of mediation and its thematic scope; 6) Sources of funding; 7) Spatial development method - e.g. private/municipal land development, cooperation with local government, etc., 8) Spatial planning system - regulation/ informality; 9) Other conditions
	Territorial Marketing	Functional and spatial concept for the selected option (issues compliant with the Act on spatial planning and development
	Business Models	The student shall develop plans and diagrams illustrating the adopted concept.
	Regional Planning	LECTURES: The content of the lectures includes, inter alia, the concepts of regional planning in spatial management, the scope of voivodship spatial development plans, the scope of the voivodship development strategy, the administrative and statistical division of the country on the example of the Mazowieckie voivodship, NUTS classification, European planning models. TUTORIALS: As part of the exercises, students prepare a report and a presentation on a selected topic related to planning at the voivodeship level, e.g. comparison of the documents of the applicable voivodeship development strategy and the design of the voivodeship development strategy, comparison of the development strategy of selected voivodeships, comparison of spatial development plans of selected voivodeships, comparison of the voivodeship spatial development plan and the voivodeship development strategy. The report should include, inter alia, the purpose of the work, the legal basis of the discussed documents, comparison of the structure and scope of the content of the documents, reference to the document implementation monitoring system, evaluation of cartographic and graphic studies being part of the documents.
	Legislative Techniques in Planning	1)Basic concepts of law - law, legal norm and its types, provision and norm, legal relationship; 2)Law-making process, building a normative act, the law-making process in Poland; 3)Constitutional sources of law - sources of universally binding law and sources of internal law; 5)Publication of legal acts, including local law acts; 6)The process of enacting the local law acts; 7)Basic principles of act legislative technique and other formal requirements to be met by a local law act; 8)Building of local law act; 9) The basic of issuing the local law acts, 10) Typical measures of legislative technique; 11) Designation of regulations and their systematization in a local law act; 12) The way of editing the provisions of the local law acts; 13) Annexes to local law acts; 14)Amendment to local law acts; 15) The local spatial development plan as a local law act.

	Revitalization of Devastated Areas	<p>LECTURES: 1. Introduction and introductory issues. The concept of revitalization in spatial planning. Motives for undertaking the revitalization problem. Explanation of the basic concepts and definitions (degraded land, devastated land, reclamation, revitalization). Legislation on brownfields and brownfields. The scale of degradation of areas in Poland. Environmental degradation in urban areas. Classification of degraded areas (post-industrial areas, post-military, post-rail and post-port areas, degraded urban areas). Susceptibility of different types of areas to different types of degradation. The process of revitalization of devastated areas. Restrictions on transformations and revitalization of degraded areas. Forms of further use of post-industrial areas.</p> <p>2. Selected aspects of nature in the revitalization process. Ecological balance. Legal acts in the field of natural issues. Environmental audit in the revitalization process. Natural environment in industrial areas. Integrated environmental analysis. Site analysis. 3. Selected case studies of post-industrial regeneration. Factors determining the use of post-industrial areas. Barriers to the development of new functions in post industrial areas. Selected examples of post-industrial areas adaptation (Polish and foreign examples). PROJECTS: The projects classes consist of two projects. Students carry out projects: 1. Analysis and detailed assessment of a selected project to revitalize a degraded area. 2. Study of a post-industrial area located in an urban area with the proposed concept of revitalization and development. Analysis of the environmental conditions of the area. The program of project classes includes a meeting with an expert during which the process of reclamation and development of a degraded area is presented. During the presentation, problems related to the revitalization of post-industrial areas in cities will be presented.</p> <p>The classes use the e-learning form of remote education (MS Teams platform).</p>
	Modelling in Spatial Management	<p>1. Basic concepts of modeling, simulation and forecasting; 2. Econometric modeling, types of econometric models, regression modeling; 3. Indicators of the correctness of the selection of the econometric model: root mean square error, coefficient of determination, corrected coefficient of determination; 4. The basics of forecasting; types of inference about the future, forecast functions, self-fulfilling and self-fulfilling forecasts; 5. Types of prognostic methods: mathematical and non-mathematical; 6. Forecasting based on time series: constant and with a trend; time series components; 7. Assessment of the accuracy of the forecast: ex ante and ex post; 8. Forecast of the financial effects of the local development plan and the use of econometric modeling in its implementation; 9. The use of numerical taxonomy and machine learning methods in forecasting changes in the value of planning space.</p>
	GIS Technologies	<p>LECTURE: Revision of concepts in the field of GIS and GIS technology. 3D GIS, 3D data sources, 3D data acquisition and 2D to 3D data transformation. Methodology of solving tasks in the field of land suitability analysis. Tools and algorithms for 3D spatial analysis. Introduction to modeling using GIS, generating various scenarios and forecasts in solving current problems and meeting socio-economic needs. Standardization of the results of spatial analyzes. Geometry transformations, spatial databases, defining and controlling topological rules. Introduction to network analysis, data sources for selected types of networks, review and examples of applications of selected network analysis algorithms. PROJECT: Project 1: The use of GIS technology to assess the attractiveness of city space (visibility analysis, criteria for assessing the attractiveness due to the view from the window). Assessment of the impact of a newly designed high-rise building on the surroundings - visibility analysis and shading analysis using 3D data and 3D spatial analysis algorithms. The project is carried out individually. Project 2: Determining the location of elements of urban infrastructure with the use of multi-criteria spatial analysis and network analysis. Automation of the process of multi-criteria spatial analysis - building geoprocessing models with the use of variables. An important stage of the project is reviewing, selecting and acquiring data for the proposed criteria and testing various algorithms of network analysis, generating variants of the location of infrastructure elements and comparing the obtained results, including the location proposals obtained from external sources (proposals from local government units or proposed e.g. as a result of conducted public consultations).</p>
	Cartographic Modelling /E	<p>LECTURE: 1) Concept and issues of cartographic modeling. Stages of cartographic modeling: Data selection, conceptual model development, database organization, data processing and analysis, cartographic presentation. Cartography as a research tool. Map as a model of selected aspects of reality. INSPIRE technical guidelines for land use information—the problems of lack of standardization - various data models in planning documents. 2) Basics of spatial data analysis and geographic information modeling. Spatial autocorrelation. Neighboring relation for vector and raster data. Methods for analyzing the distribution of geographic objects and the value of attributes of geographic objects. Linear regression model OLS and geographically weighted linear regression model GWR: conditions, analysis stages, and interpretation of the results. Kriging - basic information. LAB: Development of planning data in the GIS following the INSPIRE technical guidelines and the Polish regulation. Spatial data analysis. Development of the relative risk map and spatially smoothed risk. Spatial autocorrelation analysis. Analysis of the OLS and GWR regression model, evaluation and model selection, interpretation of the obtained results. Probabilistic interpolation by the kriging method. Application of multi-criteria analysis methods based on the exceedance relationship for discrete problems.</p>

	Remote Sensing in Spatial Management	Particular exercises included in the course form a sequence of stages of selecting, obtaining and processing optical and thermal remote sensing data into the form of thematic information layers and cover the following topics: 1. Availability of remote sensing data - review of websites that provide remote sensing data, open remote sensing data, types of available satellite image products and their analysis for the aim of their subsequent processing. 2. The use of optical images in spatial planning: · Color composites, proper selection of spectral bands and methods of contrast enhancement aimed at interpretation of the selected phenomenon with the use of satellite images. Assessment of the suitability of various color composites, incl. the purposes of identifying various types of land cover / land use, determining the share of biologically active surfaces, the share of impermeable surfaces, assessing the condition of urban green areas and forests. · Development of the thematic layer of land cover / land use using the supervised classification method (selection of training fields, assessment of their homogeneity and separability, selection of the classification algorithm, selection of spectral bands, accuracy assessment), postprocessing, development of cartographic visualization: selection of the palette color, creation of a legend, conversion from raster to vector). · Application of remote sensing spectral indices to estimate the share of urban green areas, biologically active areas. Advantages and disadvantages of various spectral indices. 3. Application of thermal images in spatial planning: · Analysis of the surface urban heat island phenomenon: - selection of satellite images - calculation of the surface
	Facultative class 4 Multicriteria Analyses in Geographic Information Systems	LECTURE: Introduction to the multi-criteria analyzes in the geographic information systems.2. Basic methods, elements, and stages of multi-criteria analysis in GIS. 3. Examples of applications and solutions - based on Polish and foreign literature (discussions): a) spatial aspects and the use of geographic information systems in multi-criteria analysis; b) multi-criteria spatial analysis with the group of decision-makers participation - support for social participation, c) applications, approaches, and methods.
	Facultative class 4: Physical Geography of Poland	Structure and geological past of Poland. The genesis of the terrain. Characteristic landforms. Soils and their distribution in Poland. Surface and groundwater. Climate Polish. Vegetation - potential and actual. Fauna Polish. Links between individual components of the natural environment. Physical-geographical division Polish. Overview of selected lands Polish. Structure and geological past of Poland. The genesis of the terrain relief. Characteristic landforms. Soils and their distribution in Poland. Surface and groundwater. Polish climate. Vegetation - potential and actual. Polish fauna. Links between individual components of the natural environment. Physical-geographical division of Poland. Overview of selected lands in Poland.
	Facultative class 5: Applications of remote sensing techniques in spatial management	The course lecture covers the following topics: 1. Introduction to the course. Basic issues in the field of aerial and satellite remote sensing. A synthetic review of remote sensing technologies in the context of their use for spatial planning. 2. Availability of photogrammetric and remote sensing data: a. Data from the state geodetic and cartographic resource and their characteristics; b. Open remote sensing data and their applicability for different purposes (license types); c. The Copernicus program and the possibilities of using Copernicus data in spatial management. Available databases on land cover / land use created with the use of remote sensing data. d. Remote sensing data (satellite and aerial) available on a commercial basis and ordering; e. Types of available products - processing levels of optical satellite data.
	Facultative class 5: Forecasting of Financial Consequences of Adoption of Local Zoning Plans	Place and significance of the forecast of the financial effects of the enactment of the local spatial development plan in the shaping of the spatial policy by the municipality. Objective and scope of the forecast of financial effects of the enactment of the local spatial development plan. Legal basis for the study. Substantive data sources. Substantive assumptions of the forecast elaboration. Description of the property status. Principles and procedure for determining potential municipality revenues: - planning fees for growth of real estate value, - betterment levies due to division of land property, - betterment levies due to consolidation and division of land property, - betterment levies due to participation in the costs of construction of technical infrastructure, - increase in property taxes, - income from the sale of municipality's land. Principles and procedure for determining potential costs: - costs related to the purchase of land for public purpose investments, - costs related to planning claims, - costs of implementing local public purpose investments in the field of technical infrastructure. Balance of financial effects of plan enactment. During lectures, it will be present practical tasks for the determination of selected income and costs of the municipality resulting from the provisions of the plan.
Specialization courses		
	Building Information Modelling (BIM)	The following topics are covered in this lecture (in 2 hour packets): 1) BIM technology basics: - history of BIM, - BIM definitions, - BIM process, - use of BIM in various industries, - use in Poland and around the world, - advantages of BIM technology, - risks of BIM, - development phases and levels of BIM, - terms related to BIM, - good practices in BIM, - interoperability, - IFC model characteristics, - Omniclass classification 2) "Families" in Revit: - categories of families, - types of families, - process of designing loadable families in Revit, - examples of family creation. 3) BIM implementations: - examples designed and executed in Revit application, - examples designed and implemented in ArchiCAD application, - examples designed and implemented in TEKLA application. 4) BIM industry collaboration: - sharing of designers' work, - connected models, - example of cooperation between designers. 5) BIM - Polish Perspective: - awareness and use of BIM, - extent of use and benefits of BIM, - barriers and needed actions, - perspectives and forecasts. 6) BIM in practice: - Fundamentals of architectural design in Revit, - basics of structural design in Revit, - basics of HVAC system design, - creating lists, diagrams and sheets in Revit. During design exercises students will become familiar with Revit, Design Review, BIM Vision applications: - familiarization with the program interface, - basic functions of the program - possibilities to load additives and libraries, - creating reference elements (axes, levels, working planes) - generating views (projections, sections, elevations), - terrain and terrain components design (small architecture, subordinate areas, descriptions), - creation of local solids, - Architectural design, - generating views from solids, - rendering and visualization, - creation of lists, - composing sheets, - exporting project and project parts, - export to IFC format, - print to pdf, dwf.

	Local Spatial Development Plan	Students work in teams of 4-5 persons. This is due to the fact that urban planning and design is a team-oriented and very interdisciplinary activity. Students make a Gantt chart at the beginning of the semester, on which they indicate the tasks foreseen for them. In June 2019, cooperation was established between the Department of Geodesy and Cartography and the Bielany District Office of the City of Warsaw. Within the framework of the aforementioned cooperation, the Office has indicated two areas for which students will develop local land use plans in the winter semester 2021/2022: the area of Serek Bielański and Wólka Węglowa. Each project team will develop a concept for both areas. These areas are significantly different from each other. The first one is a representative area, being one of the most important and recognisable places in the district. The second, located peripherally, houses a waste sorting plant. This juxtaposition of the showroom and the hinterland of the district will also allow students to gain knowledge about the functioning of districts and cities. The activities will include meetings with experts on waste management and an excursion to the waste sorting plant. In the first stage, the students will carry out analyses of connections and urban conditions. Then, design assumptions will be created based on the conclusions derived from the analyses. The validity of the provisions of the Master Development and Town Planning Scheme will be verified and, if necessary, a draft amendment to this document will be presented for the areas covered by the local land use plans being drawn up. At the end of the semester, the teams will present their projects at the Bielany District Town Hall (24.01.2022), and the jury chaired by the Head of the Architecture and Construction Department will award the best work.
	Residential Functions in Urban Development /E	The course consists of lectures and seminars. The lectures cover the following topics: Housing policy, housing needs - the right to housing - housing conditions - housing quality, housing sectors, the influence of commercial housing development on the formation of cities, social housing, trends in housing development: rent vs ownership, housing in the socialist period, the ageing of society and housing issues, cooperatives as the future of housing development, spatial differentiation of housing in cities, the role of housing in urban development. The content of lectures is supplemented with seminars where related topics are discussed with the Focus on the analysis of current documents concerning housing policy in municipalities.
	Urban Design Project for Multifunctional Area /E	Development of the concept of development and land development with various functions, on a basic map in the scale of 1: 1000, with an area of approx. 12 or 15 hectares, for which no local spatial development plan has been adopted, in order to determine the potential investment capacity of the investment area. Preparation of connections of the area with the surroundings, such as communication, natural, analysis of the identity of a district or city, on a scale of 1: 5000. Preparation of an urban inventory in the scale 1: 1000. Preparation of the concept of development and development of the investment area, scale 1: 500. In addition, each person, individually, is required to make all projections of the multifunctional facility (the level of the underground car park, ground floor and individual above-ground storeys). Based on the schematic views of the storey, the students calculate the parameters and indicators determining the investment capacity of the area, as well as the axonometric or perspective visualization of the planned development.
	Town Physical Development Planning	For the selected city, a project in the convention of the Master City Plan shall be developed in the scope of: 1. spatial development conditions of the area /location and role of the city in the region, guidelines of the voivodeship spatial development plan, conditions of the city's spatial development (issues in accordance with the Spatial Planning and Development Act), formulation of conclusions regarding the possibilities and limitations of the spatial development; 2. spatial development alternatives (city development models) 3. detailed spatial development directions of the city Functional and spatial concept for the selected option (issues compliant with the Act on spatial planning and development The student shall develop plans and diagrams illustrating the adopted concept.
	Diploma Seminar	As part of the diploma seminar, there is a presentation of the progress in the implementation of the thesis. These classes also allow the graduate to improve the skills of presenting the results of his / her work and submitting them to public discussion.
	Diploma work	A student doing a master's thesis is to demonstrate in-depth knowledge of basic theoretical and experimental knowledge in the field of spatial management and the ability to solve problems requiring the use of modern methods in the field of theoretical, research, computational and experimental analyzes. The subject of the master's thesis may be in particular: - performance of a research task in the field of study and specialization of studies, - development or improvement of a research, computational, measurement, and analytical method, - study and design work on a specific problem, made on the basis of the state of knowledge and technology, with an independent analysis and precise conclusions. The master's thesis should contain new results of analyzes, research, theoretical or computational research or a new solution to a given problem in the field of study. The diploma thesis in the form of a design, computational, study or research study should contain, among others formulated task and purpose of the work, description of the state of knowledge, concept and assumptions for solving the task, solving the problem, e.g. through experimental research, computational analyzes, drawings and charts, conclusions, list of literature and materials used in the work. The basic content is to familiarize students with: 1. Formulation and selection of a scientific problem 2. Selection of research methods and verification of a scientific thesis 3. Critical analysis of the obtained results of scientific research 4. Analysis of the current state of knowledge in the area of a selected scientific discipline 5. Using modern IT database resources scientific.