

Type of programme: bachelor master 7-semester with no of hours /week and ECTS

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

Course	Plan	Sem. I			Sem. II			Sem. III			Sem. IV			Sem. V			Sem. VI			Sem. VII		
		l	e	p	l	e	p	l	e	p	l	e	p	l	e	p	l	e	p	l	e	p
General																						
1. Facultative class 1 HES	30																					
2. Facultative class 2: HES	30																					
3. Intellectual Property Law /HES/	15																					
4. Information Technologies	30																					
5. Foreign language (selected one) /E (B2) /E (B2)	180																					
6. Sociology/HES/	30																					
7. Sport class	30																					
Basic courses																						
8 Mathematics /E	60																					
9 Computer Science	45																					
10 Technical and Planning Drawing	30																					
11 History of Architecture and Urban Planning	30																					
12 Jurisprudence, civil law	30																					
13 Ecology and Environmental Protection /E	60																					
14 Physics /E	105																					
15 Spatial Databases	45																					
16 Statistics /E	30																					
17 Economic and Social Geography, Public Statistics and Demography /E	30																					
18 Engineering Graphics	30																					
19 Economics	30																					
Profile courses																						
20 Introduction to Geology and Physical Geography	60																					
21 Land Information Systems	45																					
22 Cadastre	45																					
23 Fundamentals of Cartography /E	60																					
24 Introduction to Architecture and Town Planning /E	30																					
25 Land Use and Spatial Planning System in Poland	30																					
26 Social and Cultural Aspects of Spatial Economy	30																					
27 Soil Science /E	60																					
28 Introduction to Urban Planning	45																					
29 3D Visualisations	45																					
30 Geodetic Fundamentals in Spatial Location of Objects	30																					
31 Geodetic Preparation for Investment	15																					
32 Basic Technical Knowledge on Construction 1	15																					
33 Environmental basis for spatial planning and design /E	60																					
34 Economics of cities and regions	30																					
35 Local government	15																					
36 Civil, Administration, Business Law	30																					
37 Urban inventory	30																					
38 Geographic Information System /E	45																					
39 Land management /E	60																					
40 Fundamentals of Remote Sensing	45																					
41 Revitalization /E	60																					
42 Theory of urban design and spatial planning /E	60																					
43 Urban project 1	60																					
44 Law Issues in Environmental Protection /E	30																					
45 Conditions of Communes Development Strategy	45																					
46 Rural Areas Development 1	30																					
47 Geodetic and Cartographic Resources	15																					
48 Revitalization project	30																					
49 Spatial Planning (Planning Project)	45																					
50 Planning of technical infrastructure /E	30																					
51 Spatial Analyses and Modelling	45																					
Specialization courses																						
52 Basic Technical Knowledge on Construction 2	15																					
53 Urban design 2	45																					
54 The Latest Realizations of Town Planning Projects /E	30																					
55 Practical Aspects of Spatial Planning	45																					
56 Diploma seminar	30																					
57 Urban Project of a Residential Complex 3	45																					
58 Social and Cultural Aspects of Spatial Economy 2	30																					
59 Public space design	60																					
60 Diploma work																						
61 Internships (4 weeks)																						
TOTAL																						

Courses descriptions

General courses		
Intellectual Property Law 1060-GP000-ISP-4005	1. The origin and concept of intellectual property, the subject and types of intellectual property and types of intellectual property law, Basic assumptions and principles of intellectual property law. 2. The concept of works. Creator and co-author of the works. The concept and subject of copyright protection. Types of copyright. 3. Moral rights - subject matter, scope, duration and performance. 4. Copyrights - subject, scope, duration and performance. 5. Transfer of the copyright. Copyright protection. 7. Limitations on Copyright Protection 8. Derivative rights - concept, types and protection. 11. Industrial property rights - subject, types, scope, transfer and protection.	
Information Technologies 1060-GP000-ISP-3011	The aim of the course is to gain knowledge of CAD and BIM technologies used in engineering design and the ability to use applications based on these technologies for planning and routing purposes. 1. Introduction to Information Technology Advanced CAD Technology Tools 2.1. 2.1 Overview of function keys and common keyboard shortcuts 2.2 Permanent and temporary location nodes 2.3 Dimensioning, changing dimensioning style, polyline referencing 2.4 Design parameters 2.5 Print and publish options (DWG) 2.6 Tables in different forms 2.7 Working with raster and vector underlays 2.8 Custom line types 2.9, 3.0, 3.1 AutoCAD Design Center and popular data sources 2.11. B-transmit option 2.12 List of system variables 3. Basics of BIM technology using Autodesk Revit application 3.1 Theoretical background and important divisions 3.2 Getting Started and File Extensions 3.3 User interface and units 3.4 Reference Elements 3.5 Designing basic building elements 3.6 Creating terrain model 3.7 Inserting subordinate areas and property boundaries 3.8 Inserting site components 3.9 Creating views from solid 3.10 Rendering 3.11 Composing a sheet 3.12 Exporting 3D Views to IFC Format 3.13 Summary of keyboard shortcuts	
Basic courses		
Computer Science 1060-GP000-ISP-1003	Primary Learning Outcome: has elementary knowledge of computer systems and networks architecture and operating systems, necessary to install, operate and maintain IP tools and manage relational databases and spatial information systems. LECTURE: 1. Introduction to computer science. 2. Operating systems, installation and maintenance of computer applications. 3. Computer systems. 4. Technologies used in spatial planning and management. 5. Computer security and network operation. 6. Computer graphics (raster and vector). 7. Visual programming. 8. Introduction to Spatial Information Systems and GIS applications PROJECT EXERCISES: 1. computer graphics - GIMP/Photoshop 2. CAD technology - True View/Design Review 3. BIM technology - BIMVision/Solibri Model Viewer 4. Visual programming - Dynamo 5. GIS technology - MapWindow 6. GIS technology - QGIS 7. GIS technology - ArcGIS	
Technical and Planning Drawing 1060-GP000-ISP-1007	The curriculum program of the exercises corresponds to the contemporary integration of disciplines in the field of town planning, architecture, drawing, and graphics. This goal is achieved through a drawing analysis of various forms while developing artistic sensitivity as well as the ability to compose a technical sheet. As part of the course, students learn the basic concepts related to technical and planning drawings as well as technical standards. Then, students proceed to the practical implementation of technical assignments and standards in a firsthand drawing form. The course is a supplement to other subjects, implemented in the study program, related to drawing, graphics, and computer modeling.	
History of Architecture and Urban Planning 1060-GP000-ISP-1002	Lectures on the history of architecture cover the chronological order of architecture common from antiquity to the industrial revolution (second half of the 18th century), with reference to Polish architecture. It presents a general outline of the development of forms of construction and architecture as well as selected key principles of shaping them in the context of time, place and conditions. The arrangement of the lectures is chronological and presents selected examples. Lecture topics: 1. Ancient architecture: Egypt, Greece and Rome. 2. Romanesque architecture. Gothic architecture. 3. Renaissance architecture. Baroque architecture. 4. Architecture of the late baroque and classicism of the eighteenth century. 5. Architecture of the nineteenth century in Europe. Lectures on the history of urban planning present urban assumptions and compositions in the context of time and city development. The features of the spatial composition that are most characteristic for a given epoch are brought out. The arrangement of the lectures is chronological. The time frame of the cycle covers the period from antiquity to the outbreak of World War I. Selected examples and problems are presented. Lecture topics: 1. History of city building - introduction. The beginnings of urban civilization. Urban factors of the formation and development of cities. 2. The achievements of ancient urban planning. 3. Early medieval town planning in Europe. Location threshold. Polish cities in the Middle Ages. 4. European cities in the Middle Ages. 5. The theory and practice of the Renaissance: Renaissance treatises, reconstruction and founding of cities. Zamosć. Fortresses and castles. The city of the Baroque period; residential complexes, city squares: Rome, Paris, Versailles, Warsaw in the 17th - 18th centuries. 6. Cities in the days of the Enlightenment and the French Revolution. The development of Napoleonic fortifications. 7. Reconstruction of European capitals in the nineteenth century and the development of Warsaw. 8. Town planning at the turn of the 19th and 20th centuries. The impact of the industrial revolution on the development of cities.	
Jurisprudence, civil law 1060-GP000-ISP-1010	1. The concept and systematics of law. 2. Sources of law, including EU law and legal interpretation. 3. Basic concepts of law - legal norm and its types, provision and norm, legal relationship. 4. Law-making, building a normative act, the law-making process in Poland. 5. Basic information on civil law and subjective law concepts and division as well as principles of civil law. 6. Legal entities - an individual and a legal person, methods of their creation and their legal capacity, representation of legal persons and their types, and online determination of persons authorized to represent legal persons on the basis of the relevant register. 7. Objects of law - types of goods, the concept of thing, division of things, components and affiliations of things, the principle of superficies solo cedit, the concept of an enterprise. 8. Declaration of will - concept and types, legal activity and its forms. Representation and statute of limitations. 9. Division of rights in rem. Ownership - concept and legal boundaries, joint ownership. 10. Perpetual usufruct - the concept and features that distinguish them from property, types and features of limited property rights. Types and description of real estate. 11. Ways of acquiring ownership, features of the ownership transfer contract and its example. 12. Contracts as a source of obligations. The principle of freedom of contract. Modes of concluding a contract. 13. Fulfillment of contractual obligations. Consequences of non-performance or improper performance of the contract. 14. Land and mortgage registers and the land and building registration.	
Ecology and Environmental Protection 1060-GP000-ISP-1011	LECTURE: Basic concepts: natural environment, environmental protection, degradation, revitalization, revalorization, reclamation. Natural environment - its basic elements and subsystems: atmosphere, lithosphere, hydrosphere, biosphere. Natural resources as the basis of management and determinant of spatial solutions. Environmental limitations of socio-economic development. Influence of anthropogenic factors on the functioning of geosystems. The influence of natural and anthropogenic factors on the functioning of geosystems. Ecological threats or ecological catastrophe. Ecological systems functioning in space. The structure and organization of ecological systems. The trophic and spatial structure of the Environment. Biogeochemical cycles of the environment. Factors limiting the development of organisms. Features and structure of the population. Interactions between populations. Types of atmospheric air pollutants and environmental effects. Characteristics of natural and anthropogenic sources of air pollution. Negative phenomena such as: the greenhouse effect, ozone hole, soil acidification, metal corrosion, water eutrophication as a result of air pollution. Water pollution and environmental effects. Types of water pollution - chemical, physical, biological. Sources of pollution of rainwater, groundwater, surface water, sea water pollution. Environmental effects of water pollution. Reasons for soil degradation. Functions of soils in the environment. Geotechnical soil degradation causing distortion of the relief. Physical degradation of soils. Biological soil degradation. Chemical degradation of soil. Strategy for sustainable socio-economic development - genesis and essence of this strategy. Environmental impact assessment as a determinant for spatial management. Regional and international cooperation in the field of environmental protection.	
Spatial Databases 1060-GP000-ISP-2001	Project: Basic functions of the software used to maintain databases of land information systems. Conventional signs, information layers, ways of visualization. Basic operations on land information system objects: selection of the presentation area, measurements of geometric quantities, printing of a map fragment. Data analysis in land information systems: search and selection of data based on geometric and descriptive conditions. Making a fragment of a digital base map on the basis of field sketches. Creation of DTM for a fragment of terrain. Calibration of rasters using various transformation models. Vectorization of a fragment of the base map.	
Economic and Social Geography, Public Statistics and Demography 1060-GP000-ISP-2004	The aim of the course is to equip the student of the field of spatial economy studies with basic information on economic and social geography of public statistics and demography. The selection of topics and the content of the education were adapted to the needs of education in the field of Spatial Management at a university with a technical profile. The main objectives of the course are: Acquiring knowledge about economic, social, political and cultural issues influencing the localization conditions of human activity. To acquaint students with the basic economic and social problems of Poland against the background of the European countries (including the European Union) and the world in terms of spatial differentiation. Orientation in the system of official statistics and the ability to use IT resources of the CSO (at the basic level).	

Rural Areas Development 1 1060-GP000-ISP-5004	Lecture: Directions of rural development in Poland in the light of sustainable economic development. The concept of sustainable development of rural areas, factors influencing sustainable development. Development of rural areas in the post-war period and the results of the latest statistical research related to changes in rural areas. Tasks of government and local government administration in shaping and development of rural areas. Data sources - geodetic databases, digital maps - used for the needs of selected rural development activities. Variability and development of functions of rural areas as a consequence of economic and urbanization processes. Positive and negative impact of particular functions on rural areas. Functions of rural areas, characteristics of basic functions. Problem areas of rural areas. Development strategies. Instruments supporting the development of rural areas. The Idea of Smart Villages. Development of villages and rural areas in EU legislation. Act on shaping the agricultural system. Strategic Plan for the Common Agricultural Policy. The design exercises: Students perform three short design exercises in which they examine the natural conditions, mainly soil, and indicate the possibilities for the development of various functions in rural areas. The area of research is registration precincts located in different parts of the Mazowieckie Voivodeship, which allows students to familiarize themselves with the various needs and problems related to the development of these areas. Students work in project teams of 3-4, gaining the ability to work in a team. The exercises consist of: 1. Analysis of the soil conditions of the selected area from the point of view of spatial planning on the basis of a soil quality map in the scale of 1: 5000. 2. Analysis of the conditions and directions of land development in terms of planning and determining the directions of development of various functions based on cartographic
Geodetic and Cartographic Resources 1060-GP000-ISP-5010	General provisions of the Surveying and cartographic law, surveying and cartographic services. Surveying and cartographic works. Land and building register. Surveying register of infrastructure networks. National surveying and cartographic resources. Professional entitlements and disciplinary responsibility. Register of municipalities, streets, and addresses. Penal provisions and fines. Fees for surveying and cartographic activities. Technical standards of performing site and height measurements, and processing and reporting results of such measurements to the national surveying and cartographic resources.
Revitalization project 1060-GP000-ISP-5016	Framework program: 1. Selection of a research area - introduction and getting to know the subject. 2. Diagnosis of the research area. A field research for the identification of residents b. Survey on the needs of residents c. Inventory and analysis of the research area - inventory of the current state of development - analysis of planning documents; - Analysis of related strategic documents; - Analyses of the area's connections including: environment, demographic, functional and spatial analysis, service availability, transport accessibility, analysis of spatial conflicts, etc. 3. Research of the literature in terms of the identification of revitalization solutions used in areas of similar specificity - theoretical study. Identification of "good practices" of the most important elements and activities related to the selected type of area to be transformed. 4. Revitalization project. 5. Presentation of solutions. 6. The Oxford debate. The classes have been prepared and will be conducted with the use of innovative and creative forms of education.
Spatial Planning (Planning Project) 1060-GP000-ISP-6020	DESIGN EXERCISES: Preparation of a draft drawing of a local spatial development plan for a selected area of a city or commune, along with the text of detailed arrangements for selected areas, with the use of applicable standards and legal provisions used in spatial planning.
Spatial Analyses and Modelling 1060-GP000-ISP-6001	LECTURE: Spatial analysis and modeling - introduction and review of basic terms and definitions. The adopted data model (raster, vector), and the specificity and scope of analyses, topological data model. Overview of the basic types of analytical operations, operators and functions of spatial analyses in the raster and vector environment. Multi-criteria analyses; definition of the problem and determination of the purpose of the analysis, definition of decision criteria and selection of the analysis method, correct identification of the input data, evaluation and normalization of the response (images) to the criteria, weighting, combining the responses to the criteria. Methodology of solving tasks in the field of land suitability analyses for a specific activity, investment. Comparative analyses. Development and presentation of analysis results. Overview of practical applications in the field of land suitability analyses. Designing optimal connections on the ground surface; cost weighted distance, relative and cumulative cost areas. Introduction to analyses using GMT and MWP data, examples. Introduction to network analysis, applications. Landscape analysis, study of changes, methods of analysis of temporal changes. Development of the concepts: model, modeling, modeling in the GIS environment, modeling methodology, generation of various scenarios. Review of selected issues in the field of environmental impact assessment of investments, examples of the use of spatial analyses. The quality of the input data and the accuracy of the results of spatial analyses. Project. EXERCISES: Practical implementation of selected tasks illustrating the use of spatial analyses to support the decision-making process. Basic tasks in the field of spatial analysis are performed in both raster and vector-oriented GIS environment using IDRISI and ARCGIS software, respectively. Before starting work with the use of specific software for the first time, an introduction and familiarization with the basic functionality of the software are provided. The subject of the tasks includes, in particular, various examples of the use of multi-criteria spatial analyses in the assessment of the suitability of a site for a specific purpose, the result of which is to indicate the optimal location for a given
Specialization courses	
Basic Technical Knowledge on Construction 2	The subject is to deepen the students' knowledge of building and construction. The lectures will discuss service facilities in the field of trade, offices, industry, education, ecological solutions in construction, sustainable development in construction.
Urban design 2	The educational task of the project is a detailed analysis of a city in the scope of its spatial conditions, cultural values, environmental and functional relations, and identity of the city. In the second part, the task is to develop a concept of "correction of degraded urban space" or "urban voids" with consideration of good residential conditions based on the concept of the city of well-being and 15-minute city, and city resistant to climate change. Students present a detailed concept of an area of approximately 5 ha showing types of building development, solutions for details of public spaces, and development of streets of the existing and planned building development based on well selected inspiration. The final effect is the preparation of guidelines concerning modernisation of the entire area.
The Latest Realizations of Town Planning Projects /E	The lectures present current trends in the design and implementation of larger urban planning systems over the recent decades that are considered best, reflecting the valid rules of implementation and composition. The presented implementations concern activities such as: transformation of spatial structures of cities after natural disasters and resulting from development activities, revitalisation of post-industrial and post-port areas, development of new housing complexes, development of urban sequences in urban agglomerations, changes in management of central service nodes in districts of cities and satellite cities, and others. Urban planning implementations are discussed in a broader context of history, development conditions, and planning activities. Particular emphasis is put on pro-ecological projects and those implementing the principles of space saving.
Practical Aspects of Spatial Planning	LECTURES: 1. Legal validation of planning documents prepared at the local level. 2. Procedures for preparing a study of the conditions and directions of spatial development and a local spatial development plan. 3. Urban and Architectural Commission 4. Coverage of Warsaw and sub-Warsaw communes with local plans. 5. The degree of detail in planning arrangements regarding, inter alia: the principles of division into building plots; lines, bodywork parameters and indicators, and communication services. 6. Recording of an urban design in the planning convention. EXERCISES: 1. Graphic part - an excerpt from the study drawing, concerning the functional and spatial structure 2. Extract from the text of the study on: functional and spatial structure, functional structure - land use, indicators for land development and use, transport system, technical infrastructure, protection of cultural heritage, protection of the environment and its resources, rules for the distribution of public purpose investments, problem areas, areas requiring transformation and rehabilitation or regeneration, areas of planned development.
Diploma seminar	As part of the diploma seminar, there is a presentation on the topic, scope and subject of the diploma thesis. During the seminar, students also obtain information about the general principles of the diploma thesis process, the rules of editing and the structure of the study, as well as information about the course of the diploma examination. These classes also allow the graduate to improve the skills of presenting the results of his / her work and submitting them to public discussion.
Social and Cultural Aspects of Spatial Economy 2	Man and space - shaping and using space, conflict resolution. Urban space selected elements: contemporary trends in the development of urban space, urbanisation and its effects. Entities creating social space - human spatial needs, functions of entities (human, social group, society), the role of social capital. Space management, ethics of space management and use. "Case studies" - City identity, Genius loci - city spirit based on selected cities: 1. History of the city in a nutshell 2. City center - diversity of functions 3. Public space of the city 4. Diversity and order of streets - the essence of urbanity 5. Population - age structure, ethnic structure, etc. 6. Living standard of inhabitants - work, treatment, leisure, public services, social diversity of the city 7. Legibility of the city - extraordinary, unique features 8. Summary - identification of the city's identity.