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| Engineering Graphics | <p>The aim of the course is to acquire knowledge of modern techniques of preparing and reading technical drawings used in spatial planning, including: preparation of planning, construction and technical studies and readings, technical documentation. The classes are also aimed at acquiring the ability to use AutoCAD for works related to urban design and spatial planning. Students prepare architectural, technical and construction drawings (floor plans, elevations, building cross-sections) and urban drawings (urban inventory, land development plan) using AutoCAD. Students acquire the ability to read symbols and markings used on maps, architectural and construction drawings, create technical drawings and use architectural, urban and construction markings. Students learn techniques useful for the preparation of planning and construction studies. CI, C2 AutoCAD basics - downloading student licenses and application installation, operation of the application, open and save files, import and export files, application settings C2 Creating a new drawing - obazar robozcy, units, dimension, precision, coordinate system C3 C4 Rastering raster images - calibration, scale, crop, transparency C4 Layer options - creating and editing, layer properties, transparency, color, type and width of the line, display order C5 C6 Vector objects - basic objects, characteristic points, simple editing of objects C7 Precise drawing - grid and snap to drawing grid, dynamic input, polar tracking, object snap C8 Modification of objects - modify, move, copy, stretch, rotate, mirror, scale, trim, fillet, array C9 Graphical properties of objects - filling and hatching, point types, lines, individual properties of objects C10 Creating and editing blocks - block definition, insert and editing, using the block library C11 Create annotations and dimensions - add dimensions, texts, tables and references, geometric tolerance, calculation of areas, volumes, lengths, angles C12 Attributes - creating and adding attributes, exporting attribute C13 Create a layout - model view and layout view, layout attributes, inserting and editing viewports, elements of technical and planning drawings, print to file in various forms</p> |
| Economics | <p>1. Preliminary issues 2. Demand, supply and market 3. Demand responses to changes in prices and income 4. The theory of consumer choice 5. Costs and production 6. Perfect competition and monopoly 7. Imperfect competition and oligopoly 8. Determinants of the national income 9. Global demand 10. Fiscal policy and foreign trade 10. Money and the modern banking system 11. Central bank and money system 12. Unemployment and inflation 13. Economic growth and business cycles 14. International trade.</p> |
| Profile courses | |
| Introduction to Geology and Physical Geography | <p>This course introduces the basics of geology and physical geography. Students will learn about the principles and mechanisms of geological processes, landforms and earth surface processes, climate and weather, soils, vegetation, and ecosystems at global and regional scales. Lectures will also address global environmental problems such as "greenhouse" warming and climatic change, the stratospheric ozone layer, the El Niño/La Niña oceanic-atmospheric circulation pattern, and other extreme weather events. LECTURE: Fundamentals of geology: mineral, rock and soil; structure of the Earth, plate tectonics, formation and destruction of the lithosphere; basis of tectonics; igneous processes; weathering, erosion and sedimentation; metamorphic processes; basics of the geological structure of Poland; the elements of physical geography: climate, climatic diversity of regions, microclimate, global warming and extreme weather events; hydrology and hydrogeology; biosphere and soil; potential and actual vegetation; natural landscapes. CLASSES: Hypsometric map; topographic profile; geological profile; description of selected areas based on the analysis of spatial data from topographic, geological and hydrogeological maps.</p> |
| Land Information Systems | <p>Lectures: Characteristics of spatial data. Spatial data models. Spatial data infrastructure (data and services). The service www.geoportal.gov.pl and its role in the infrastructure of spatial information. Technical aspects of WMS/WMTS/WFS network services. Spatial information systems. Division of spatial information systems. A large-scale numerical map as a basic element of the land information system. Legal bases to ensure that data in field information systems is up to date. Basic information about rasters: resolution, recording method, compression, scanning, calibration. Organization of spatial data. Bounding rectangles. Spatial indexing. Methods of obtaining data for terrain information systems. Analysis of spatial data. Mathematical mechanism of data analysis (elements of computational geometry). Theoretical foundations of the digital terrain model (DTM). Sharing data from national geospatial repository (PaGiR). Legal aspects of data sharing.</p> |
| Cadastral | <p>Lecture: Legal basis of functioning of the cadastral and organizational structures of cadastral functioning. Cadastral unit of the country: cadastral unit, surveying district, parcel. Basic concepts: real estate, land real estate and registered parcel, building real estate and building, premises real estate and independent residential or other purpose premises, parcel. Collections of information on land, buildings, and premises in the cadastre and sources of data, attributes of cadastral objects. Data of entities in the cadastre: assurance of entity data in the cadastre. Report offices in the cadastre. Cadastral data sources of the district: the user public registers, including: land register, TERR, REGON, PESEL registers, and the fiscal cadastral system. Exchange of information between the registers, and rules of continuous updating of the real estate cadastre. Practical classes: Analysis of compliance of the content of the cadastral map of a selected district with the requirements of the regulation of the Minister of Development, Work and Technology of 27 July 2021 regarding cadastral. Analysis of the value of a cadastral map in terms of land use, with application of other sources of information (orthophotomaps, base map). Practical use of the existing information systems in which the cadastre is run (EWMAPA, EWOPIS and others) - work on sets included in computer data bases, preparation of excerpts from computer cadastral data bases. Determination of the useful floor area of premises, preparing a documentation file for premises, as well as calculation of the share of the premises owner designated in common property. Preparation of documentation files for buildings. Use of the online system of disclosure of cadastral information.</p> |
| Fundamentals of Cartography | <p>LECTURE: Basic definitions. Cartography - map - as a source of information and as a research tool, the role of cartography in spatial management. Basic features of the map. Information about geographic objects and phenomena showing by maps. Map classification (criteria) - examples. Topographic map. Map layout composition elements. Reading coordinates and altitudes. Database of Topographic Objects. Sources of cartographic data. Geodetic and cartographic documentation centers and Geoport. National Infrastructure for Spatial Information. Cartographic source data used in spatial management. The mathematical canvas of the map: the concept of a reference surface, basic coordinate systems, the concept of projection, grids. The concept of distortions and mapping reductions. The concept of map scale. Coordinate systems and projections used today in Poland. Geographic information systems (GIS) - as a cartographer's work tools. Vector and raster data. Data visualization: creating a cartographic presentation, map composition. The content and the scale of the map, elements of generalization. Cartography as a means of transmitting the information. Graphical language of the map. Map reading process. Graphical means of expression (graphical variables). The role of color in cartography. Stages of developing a cartographic presentation. Socio-economic mapping - methods of presenting qualitative data: signature method, range method, chromochromatic method; methods of quantitative data presentation: choropleth map, cartodiagram, isolines, and dot method. Methods of presenting the relief. Digital terrain model. LAB. Working with a topographic map: getting to know the map layout, searching for information about topographic objects, reading coordinates, altitudes. Locating objects. Working with the map service, searching for an address, parcels, obtaining information. Development of cartographic presentation in ArcGIS. 1) For topographic data base: BDOT010. 2) For socio-cultural data base: BDOT011. 3) For socio-cultural data base: BDOT012. 4) For socio-cultural data base: BDOT013. 5) For socio-cultural data base: BDOT014. 6) For socio-cultural data base: BDOT015. 7) For socio-cultural data base: BDOT016. 8) For socio-cultural data base: BDOT017. 9) For socio-cultural data base: BDOT018. 10) For socio-cultural data base: BDOT019. 11) For socio-cultural data base: BDOT020. 12) For socio-cultural data base: BDOT021. 13) For socio-cultural data base: BDOT022. 14) For socio-cultural data base: BDOT023. 15) For socio-cultural data base: BDOT024. 16) For socio-cultural data base: BDOT025. 17) For socio-cultural data base: BDOT026. 18) For socio-cultural data base: BDOT027. 19) For socio-cultural data base: BDOT028. 20) For socio-cultural data base: BDOT029. 21) For socio-cultural data base: BDOT030. 22) For socio-cultural data base: BDOT031. 23) For 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| Rural Areas Development 1 | 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 materials and descriptive soil - agricultural maps 3 Preparation of a preliminary design for the development of the habitat plot |
| Geodetic and Cartographic Resources | 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 | 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 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) | 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 | 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 analyzes, topological data model. Overview of the basic types of analytical operations, operators and functions of spatial analyzes in the raster and vector environment. Multi-criteria analyzes, 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 analyzes for a specific activity, investment. Comparative analyzes. Development and presentation of analysis results. Overview of practical applications in the field of land suitability analyzes. Designing optimal connections on the ground surface; cost weighted distance, relative and cumulative cost areas. Introduction to analyzes using NMT and NMPT data, examples. Introduction to network analysis, applications. Landscape analysis, study of changes, methods of analysis of temporal changes. Development of the concept: 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 analyzes. The quality of the input data and the accuracy of the results of spatial analyzes. Project. EXERCISES: Practical implementation of selected tasks illustrating the use of spatial analyzes 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 analyzes 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 type of investment, activities, etc., and to generate and evaluate various scenarios. |
| 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 reclamation, 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, urbanization 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, apartment, leisure, public services, social diversity of the city 7. Legibility of the city - extraordinary, unique features 8. Summary - identification of the city's identity. |