도 시 공 학 과

(DEPARTMENT OF URBAN PLANNING AND ENGINEERING)

**Department Introduction**

Department of Urban Planning and Engineering is training the specialists who possess the knowledge and ability to plan, design, develop and manage the city in order to improve the quality of life for present and future generation through sustainable development of cities.

The sustainable development of cities can be accomplished by striving for economic development of cities, social integration and creation of pleasant eco-friendly urban area. And the social·economic·environmental situation faced by the city are always getting changed just like globalization, informatization, democracy and global warming. In order to accomplish a sustainable development in the middle of such changes, the high quality workers with the ability to creatively solve the urban problems by having professional knowledge on the city are absolutely necessary. Urban Planning and Engineering department was established in 1980 to answer to social demand on such professionals.
Department of Urban Planning and Engineering performs theoretic education and practical experiment on various fields including urban planning, urban design, transportation planning, transportation engineering, and urban environment planning, etc.

**List of Faculty Members**

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| --- | --- | --- | --- | --- |
| Position | Name | Last School Graduated | Degree | Major |
| Professor | Kim, Kap Soo | Osaka Univ. | Ph.D | Traffic Engineering and Noise Engineering |
| Professor | Kim,Ta Yeul,   | Hanyang Univ. | Ph.D | Urban Planning and Urban Land Use Planning |
| Professor | Yun, Dae Sic | The Ohio State Univ. | Ph.D | Transportation Planning, Urban Analysis and Modeling |
| Associate Professor | Suh, Jung In | Tottori Univ. | Ph.D | Environmental Engineering and Planning |
| Associate Professor | Shin,Dong Jin | Newcastle Upon Tyne Univ. | Ph.D | Urban Planning and Design |
| Assistant Professor | KIM Chul Young | Tokyo Univ. | Ph.D | Urban Planning and Design |

**Academic programs**

Master’s program

Doctoral program

**Course Description**

■ Basic Major Courses

교통계획특론 3 credit

(ADVANCED TRANSPORTATION PLANNING)

This course provides fundamentals of transportation planning, and advanced transportation planning issues. The course deals with principles of transportation planning, techniques used in travel demand forecasting, transportation planning tools, and some transportation policy issues.

도시계획이론 3 credit

(URBAN PLANNING THEORY)

This course helps students understand urban planning not only as a product but also as a process. It explores several approaches to urban planning theory and introduces various theories of planning as well as theories for planning. It puts emphasis on urban planning process rather than on urban plan produced by the process. Particularly it discusses new trends in planning theory such as a collaborative planning theory and a communicative planning process.

도시환경특론 3 credit

(MANAGEMENT OF GLOBAL AND URBAN ENVIRONMENT)

This course helps students learn several crucial issues in the urban environment and 　enhance their ability of providing a possible solution to the issues. It consists of various lectures on the following issues; global warming, ozone depletion, acid rain, air pollution, urban heat island, municipal solid waste, remadiation and control technologies and so on.

수리계획특론 3 credit

(ADVANCED OPERATION RESEARCH FOR URBAN ENGINEERING)

This course is designed to give an overview of quantitative decision-making approaches commonly used in urban planning and engineering. This course deals with mathematical programming methods such as linear programming, integer programming, dynamic programming, network modeling, graph theory, and some advanced statistical methods such as queueing theory, probability theory, time-series analysis, simulation.

토지이용계획특론 3 credit

(URBAN LAND USE POLICY)

This course deals with urban policy related to urban land use planning. It introduces various approaches to urban land use policy such as a land classification plan for metropolitan area and land use design for urban area. A key issue of urban land use policy is the location and allocation of various land uses such as open space, residential area, commercial area, industrial area and others. It puts emphasis on balance between demand and supply of land as well as between location land suitability of land.

■ Major Courses

개별연구(1) 3 credit

(INDEPENDENT STUDY (I) 3 credit )

개별연구(2) 3 credit

(INDEPENDENT STUDY (II) 3 credit)

도시공학과세미나 1 credit

(SEMINAR 1 credit)

■ 도시ㆍ환경계획전공

(MAJOR IN URBAN AND ENVIRONMENTAL PLANNING)

단지계획특론 3 credit

(SITE PLANNING FOR SUSTAINABLE DEVELOPMENT)

This course explores site planning techniques for sustainable development. It reviews problems of urban development in terms of sustainability and helps students develop understanding of an ecological approach to site planning. Particularly it puts emphasis on balance between environmental sustainability and socio-economic sustainablilty in site planning practices. It also provides lectures on new trends in site planning such as new urbanism, transit-oriented development, urban renaissance, compact city, etc.

도시경제특론3 credit

(ADVANCED URBAN ECONOMICS)

The purpose of this course is to introduce economic interpretation of various urban phenomena and problems. The course deals with economics of urbanization, analysis of urban spatial structure, economics of planning (public intervention), and detailed studies of various urban issues concerning industrial location, land use, transportation, pollution, urban economic policy, etc.

도시구조특론 3 credit

(THEORY OF URBAN SPATIAL STRUCTURE)

This course classifies urban spatial structures in terms of city size, key functions of a city and the extent to which a city is matured. Then it conducts an empirical analysis of individual urban spatial structures. Particularly it deals with land use changes in an inner urban area, a locational pattern of industrial areas, and a spatial pattern of residential areas.

도시모형론 3 credit

(QUANTITATIVE MODELS IN URBAN PLANNING)

The purpose of this course is to introduce advanced quantitative methods for urban analysis and modeling. The course deals with fundamentals of urban modeling, spatial interaction models, benefit-cost analysis, and other quantitative models used in urban analysis and planning.

도시설계특론 3 credit

(URBAN DESIGN IN PRACTICE)

This course teaches urban design theories and urban design methods at first. Then it identifies four types of urban design practice as urban development design, design policies guidance and control, public realm design and community urban design. On the basis of the types, it illustrates individual types of urban design practice through case studies. It also identifies basic knowledge and skills for urban design which a competent urban designers should have.

도시시설계획특론 3 credit

(URBAN INFRASTRUCTURE PLANNING)

This course introduces a concept of the urban infrastructure and the urban management planning procedure for the installation, consolidation or improvement of it. Urban infrastructure, that this course is concerned about, can be classified into several function groups such as transportation, urban open space, energy and water supply, culture and welfare, health and sanitation, disaster prevention and hospitals, etc. This course provides lectures on planning standards of individual infrastructure and on the public investment principles for them.

도시재개발특론 3 credit

(THEORY OF URBAN RENEWAL)

This course deals with the problem of inner urban area such as economic decline, overcrowdedness, deteriorating environment conditions, building decay, poor housing, inadequate infrastructure, etc. It focuses on the renewal of the older neighbourhoods of our cities and explores the way in which we can stimulate economic regeneration of the inner urban area and integrate this with environmental and social policies.

도시정보체계론3 credit

(URBAN PLANNING INFORMATION SYSTEM)

This course introduces a Geographic Information System(GIS) which is a very effective system for collecting, analyzing and displaying the data related to a specific location. It aims to help students understand a basic concept of GIS and the structure of data and utilize the GIS as a tool for resolving urban problems. It consists of lectures on theories and a workshop in which students can use the GIS software themselves.

도시형태론 3 credit

(URBAN MORPHOLOGY)

Urban morphology is the study of the form of human settlements and the process of their formation and transformation. The study seeks to understand the spatial structure and character of a metropolitan area, city, town or village by examining the patterns of its component parts and the process of its development.

도시환경계획특론 3 credit

(ADVANCED URBAN ENVIRONMENTAL PLANNING)

This course helps students study environmental planning comprehensively to evaluate environmental elements such as heat balance and circulation of materials, water and energy, and physiologic and psychological impact on the urban environment.

도시환경분석특론 3credit

(URBAN ENVIRONMENT SYSTEM ANALASIS)

This course discusses the way of analyzing the following problems; land, climate, vegetation, and atmosphere pollution problems. It explains the methods of qualitative and quantitative analysis for students to understand the actual conditions and the trends of those problems. In addition, it deals with the application of the outcome analysis to urban planning.

도시환경시설계획특론 3 credit

(FUNDAMENTALS OF URBAN ENVIRONMENTAL FACILITIES PLANNING)

This course aims to help students understand the basic principles of urban ecological engineering that strengthens the functions of ecosystems, restores devastated ecosystems, and utilizes the functions of ecosystems. It also introduces the foundations of urban water environment restoration technologies that incorporate ecological engineering. Its ultimate goal is to teach students how to develop and to plan technologies and systems that allow human being to coexist with the natural world.

주택정책론 3 credit

(HOUSING POLICY)

This course helps students develop the basic knowledge required for housing policy formulation. It focuses on the formulation of housing policy for a city-level urban area. It covers theories on housing service level and housing location, housing sub-markets influenced by demand and supply of housing, and the public policy for resolving urban housing problems.

지역계획특론 3 credit

(THEORY OF REGIONAL PLANNING)

This course deals with theories on the balanced and unbalanced regional development from the perspective of an inter-regional planning. It explores regional development policies and the measures for implementation of them. It also provides lectures on community planning theory with emphasis on a settlement system theory from the perspective of an intra-regional planning.

■ 교통공학전공

(MAJOR IN TRANSPORTATION ENGINEERING)

교통공학특론 3 credit

(ADVANCED TRAFFIC ENGINEERING)

This course is designed to study advanced topics in traffic engineering. The course deals with geometric design, traffic flow analysis, highway capacity analysis, traffic signals, traffic safety, analysis of level-of-service of road, environmental impacts of transportation facilities, and others.

교통류이론3학점

(THEORY OF TRAFFIC FLOW)

This course is designed to study various qualitative and quantitative descriptions of the complex phenomenon of traffic flow. The course deals with traffic flow models, driver characteristics, car-following theory, queueing theory, simulation studies, mathematical experiments, and others.

교통소음진동 3 credit

(TRANSPORTATION NOISE AND VIBRATION)

This course is designed to study noise and vibration caused by surface and air transportation. The course deals with basic theories of noise and vibration, characteristic analysis of transportation noise, design of preventive measures, and others.

교통수요예측 3 credit

(TRANSPORTATION DEMAND FORECASTING)

The purpose of this course is to introduce techniques used in transportation demand forecasting. The course deals with direct demand models, four-step demand forecasting techniques, probabilistic choice models, and others.

교통시설공학특론 3 credit

(ADVANCED TRANSPORTATION FACILITIES ENGINEERING)

This course is designed to study various transportation facilities in terms of transportation planning aspects. The course deals with road, subway, rail-road, pedestrian transportation facilities, emphasizing on planning criteria and standards.

교통시스템계획특론3 credit

(ADVANCED TOPICS IN TRANSPORTATION SYSTEM PLANNING)

This course focuses on principles and related issues of transportation system planning. The transportation systems to be reviewed include bus, subway, rail, light rail transit etc. The course deals with planning process of transportation systems, goal setting, survey and information management, demand analysis and forecasting, evaluation of alternatives, and others.

교통안전론3 credit

(TRAFFIC SAFETY)

This course is designed to study reasons and preventive measures of traffic accidents. The course focuses on planning criteria and standards of traffic safety facilities, transportation improvement programs and area traffic controls for enhancing traffic safety, road design for safe driving, etc.

교통용량분석3 credit

(ANALYSIS OF TRAFFIC CAPACITY)

This course focuses on analyzing capacity, effectiveness measures, level-of-service of various types of roads. Furthermore, this course deals with various planning measures for enhancing road capacity.

교통운용관리특론 3 credit

(ADVANCED TRANSPORTATION SYSTEM MANAGEMENT)

This course is designed to provide knowledge and technologies to solve various transportation problems. It covers efficient operations of transportation facilities, improvement of road capacity, and other transportation schemes that improve transportation conditions.

교통정책분석 3 credit

(TRANSPORTATION POLICY ANALYSIS)

This course is designed to analyze transportation policy alternatives. The course deals with transportation policy issues such as mass transportation, transportation demand management, intelligent transportation systems(ITS), traffic impact assessment, congestion pricing, parking regulation and pricing, and others.

대중교통계획 3 credit

(PUBLIC TRANSPORTATION PLANNING)

This course is designed to understand various characteristics of public transportation systems, and to analyze various aspects of the systems. The course deals with public transportation system technology, operation, and planning including vehicle characteristics, bus transit, light rail and rail rapid transit, schedules and networks, capacity, passenger characteristics, and paratransit.

신교통시스템계획3 credit

(ADVANCED TRANSPORTATION SYSTEM PLANNING)

This course is designed to understand characteristics of advanced transportation systems such as light rail transit and personal rapid transit, and to analyze various aspects of the systems. The course deals with technology, operation, and planning including system characteristics, capacity, and construction(provision) costs.

주차장계획및설계3 credit

(PARKING PLANNING AND DESIGN)

This course focuses on exploring principles of parking planning and design. The course deals with parking demand forecasting, parking design, parking regulations, parking information systems, parking fare policies, and others.

교통시스템분석및평가 3 credit

(TRANSPORTATION ANALYSIS AND EVALUATION)

This course identifies concepts fundamental to the planning, design, operation, and management of transportation systems. Transportation systems analysis is a multidisciplinary field with a unified theoretical basis and a diversity of practical applications that incorporates concepts from economics, engineering, operations research, statistics, management, psychology, and public policy analysis. Topics include the basic demand-supply microeconomic framework, analysis of transportation demand, transportation system performance, network equilibrium, and associated case studies.