



# URBAN SERVICES PLANNING

## **PROF. DEBAPRATIM PANDIT**

Department of Architecture and Planning

IIT Kharagpur

**INTENDED AUDIENCE :** Bachelor in Architecture, Bachelor in Planning, Bachelor in Technology(Civil), Master in (City/Urban Planning, Urban Engineering, Physical Planning, Technology)

**INDUSTRY SUPPORT :** All Architecture, Urban Planning, Infrastructure and Consultancy Services firms providing solutions for urban areas

## **COURSE OUTLINE :**

This course covers the fundamentals of urban services planning including solid waste management, municipal health and social services and other urban services such as street lighting, fire services etc. Additionally, students are introduced to the different aspects of services planning such as strategic aspects, regulatory frameworks, life cycle analysis, environmental impact assessment, community participation & awareness generation and municipal governance & finance. The course will enable students to conduct gap analysis, analyze the current context, propose relevant technologies and methods and prescribe appropriate policies and management strategies for these urban services.

## **ABOUT INSTRUCTOR :**

Prof. Debapratim Pandit is currently an Associate Professor at the Department of Architecture and Regional Planning, Indian Institute of Technology Kharagpur. He has completed his PhD from the Department of Urban Engineering, University of Tokyo and has more than thirteen years of teaching and professional experience. He teaches Urban utilities and Services Planning, Urban informatics, Advance Transportation Planning and Development Plans for Post Graduate and Research students. He has published several book chapters and papers in top international journals and has undertaken a wide array of consultancy and research projects on urban infrastructure, utilities and services.

## **COURSE PLAN :**

**Week 1: Urban Services Planning:** Introduction Different type of municipal services, Strategic aspects, Regulatory framework, Role of stakeholders, Urban management and finance, Public private partnerships, Benchmarks, Government programs

**Week 2: Service planning approaches:** Planning theories, Pollution and health perspectives, Greenhouse gas emission reduction, Environmental Impact assessment, Life cycle analysis, Community participation and awareness

**Week 3: Integrated municipal solid waste management and plan preparation for urban areas:** Solid waste management rules, Extended producer responsibility, Source segregation, Decentralized waste management, Integration of informal sector, Municipal solid waste management planning and organizational setup, Operation and maintenance, Financial implementation plan, Schedule for plan preparation

**Week 4: Solid Waste generation, storage and minimization:** Waste classification, Waste quantity, Waste minimization, Waste characteristics, Data collection and sampling strategy, Waste forecasting, Waste storage

**Week 5: Waste collection planning for urban areas:** Primary and secondary waste collection strategies, Equipment, vehicles and staffing requirements, Depot, containers and transfer stations, Routing and scheduling for solid waste vehicles, Case studies

**Week 6: Waste processing, recycling and recovery planning:** Waste processing, Concept of 3Rs, Recycling and recovery, Composting, Vermicomposting, E-waste management and recovery, Case studies

**Week 7: Waste disposal planning for urban areas:** Landfill siting criteria, Landfill area calculation, Landfill Types, Landfill Design, Landfill phasing, Identification of land and inclusion in city development plan, Case studies

**Week 8: Adoption of advanced waste treatment technologies:** Waste to energy, Incineration, Pyrolysis, Gasification, Biomethanation, Refuse derived fuel, Evaluation of alternative technologies, Case studies

**Week 9: Other municipal waste management services:** Street sweeping, Cleaning of surface drains, Plastic waste, Construction and demolition waste, Hazardous waste management, Case studies

**Week 10: Municipal health services:** National urban health mission, Public health challenges, Health facilities, Stakeholders, Improving healthcare access for the urban poor, Community based healthcare programs, Epidemic and pandemic control, Government programs

**Week 11: Municipal social services:** Planning for economic and social development, Urban poverty alleviation, Vulnerable population groups, Social welfare services, Geriatric services, Government programs and case studies

**Week 12: Other Municipal services:** Street lighting services, Fire services, Urban forestry, environment and ecology, Provision of parks, gardens and playground, burial grounds and cremation facilities