

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

Syllabus for Ph.D. Written Test/ Interview

Operations Management/Industrial Engineering:

Supply Chain Management, Project Management, Production Planning & Control, Applications of Operations Research, Statistics and Machine Learning in Operations Management

Urban and Regional Planning:

Principles and Theories: Planning concepts and principles, urban form and spatial structure, theories of urban growth and development (e.g., concentric zone theory, sector theory, multiple nuclei theory), transportation planning principles, urban mobility and accessibility, new urbanism, smart growth, transit-oriented development (TOD), slum and informal settlement, urban regeneration and renewal, place-making principles, sustainable urban planning approaches, emerging trends in urban planning, municipal finance, tax and non-tax revenue, intergovernmental transfers, new instruments of finance, infrastructure financing, agglomeration economies and economies of scale, economics of housing and real estate, transport economics, economics of opportunities in cities, informality, migration and development, climate change and sustainability, global urban challenges.

Methods and Techniques:

Qualitative research methods (interviews, focus groups, case studies), quantitative research methods (surveys, statistical analysis), urban behavioral modelling, geographic information systems (GIS) and spatial data analysis techniques, big data for urban planning, data-driven modelling approaches, scenario planning and visioning methods, participatory planning approaches, forecasting and simulation models.

Policy, Legislation, and Governance:

Urban and regional planning legislation, land use regulations and zoning laws, land acquisition acts, governance frameworks and institutional structures, decentralization, public participation in planning processes, equity and social justice in planning, inclusive urban development policies, urban policies and programs, housing and infrastructure policies, affordable housing, infrastructure planning and management.