UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Sustainable Mobility, Infrastructures and Urban Changes

2324-2-F4901N121

Learning objectives

The United Nations' Agenda 2030 goals have given new attention to the issues of sustainable development and ecological transition, particularly in environments characterised by high human pressure such as urban areas. In order to achieve the goal of making cities and human settlements inclusive, safe, durable and sustainable, more and more attention is being paid to promoting sustainable mobility and transport systems and improving accessibility to local services and opportunities.
The Course is set in this context with the aim of training students on the main issues concerning the mobility and transport system for people and goods, with a focus on the demand and supply of services and infrastructures, and its interactions with contemporary urban and metropolitan systems and tourism systems. Attention is also paid to national and local policies for the sustainability of the mobility and transport system and urban and territorial development, also with the aim of training skills in urban and territorial planning. Finally, a final section of the course is dedicated to training skills on the method and techniques of territorial data analysis pertaining to mobility, infrastructures and territorial transformations.

Contents

The course is structured in sessions devoted to theories, research and policies on mobility and transport systems and their interaction with the main transformations that have occurred in the socio-economic systems of contemporary urban and metropolitan areas and in tourism systems.
In summary, four thematic areas will be addressed:
1- the mobility system, the socio-economic and territorial factors underlying the increase in mobility demand and supply and the dynamics of urbanisation;
2- the structure and dynamics of mobility and transport demand and supply and the consequences on urban morphology;
3- transport networks, infrastructure and logistics;
4- the socio-territorial and environmental consequences of mobility;
5- national programmes, policies and planning for sustainable mobility.

Detailed program

The course will address, in detail, the following topics:

1. Mobility system: demand, supply and policies and types of mobility;
2. Factors behind the increase in demand and supply of mobility: socio-demographic, spatial and motorisation changes;
3. Types of metropolis, mobile populations and the process of urbanisation, peri-urbanisation and the development of metropolitan areas
4. Structure and dynamics of systematic and a-systematic daily mobility demand;
5. Structure and dynamics of public and collective transport supply;
6. Active mobility and spatial transformations: pedestrian mobility, cycling and proximity accessibility
7. Transport networks, infrastructures, logistics and the transformation of places of mobility
8. Socio-territorial and environmental consequences of everyday mobility: self-dependence, multi-localism, accessibility and social exclusion, pollution and accidents
9. National programmes and policies for sustainable mobility;
10. Policies, interventions and planning for sustainable mobility.

The aforementioned topics will be tackled paying particular attention to methods and data for the analysis of socio-territorial urban and tourism processes, making use, to this end, of a Laboratory specifically aimed at transferring skills in the field of secondary data analysis, quantitative socio-territorial analysis, knowledge and use of data sources and archives and the use of territorial information systems.

Prerequisites

No prerequisites are required to attend the course and take the examination.

Teaching methods

Classroom lecture, workshop and exercises

Assessment methods

Drafting of a research thesis in group work on the topics covered in the Course

Textbooks and Reading Materials

Selected parts of the following texts:

Cascetta, E. (2009). Transportation systems analysis: models and applications. 2nd ed., Ser. Springer optimization

and its applications, v. 29. Springer.
• Colleoni, Matteo (2019), Mobilità e trasformazioni urbane. La morfologia della metropoli contemporanee, Franco Angeli, Milano.
• Coppola, Pier Luigi, Pucci, Paola, Pirlo, Giuseppe (a cura di), (2022), Mobilità & città: verso una post-car city, Ottavo Rapporto sulle città, Urban@it, Centro nazionale di studi per le politiche urbane, Il Mulino, Bologna.
• Jensen, O.B., et al. (2020), Handbook of Urban Mobilities (1st ed.). Taylor and Francis.
• Pucci P., Colleoni M. (2016), Understanding mobilities for designing contemporary cities. Springer Editor.
• Sheller, M., Urry, J. (2006), The new mobilities paradigm. Environment and Planning A, 38: 207–226.
• Urry, J. (2007). Mobilities. Polity Press.
Selected parts of the main national and local plans for sustainable mobility and spatial planning.

Sustainable Development Goals

INDUSTRY, INNOVATION AND INFRASTRUCTURE | SUSTAINABLE CITIES AND COMMUNITIES | CLIMATE ACTION