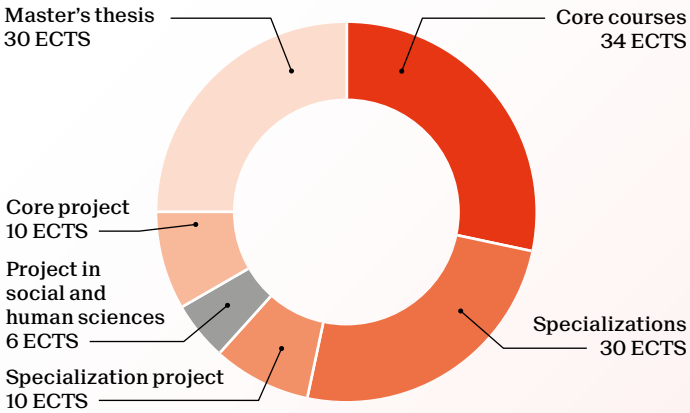
Master of Science in

URBAN SYSTEMS

2-year program - 120 ECTS



The program includes a compulsory 8-week internship which can be extended to 6 months and combined with the Master's thesis.

Students may choose a 30 ECTS specialization in:

A Mobility and transportation in a changing climate
B Sustainable transitions in urban systems
C Health and well-being in urban environment

Changes to the course and options offering may apply. Please refer to the web page of the program for updated details.

	Specializations			Credits
	A	B	C	
Core courses				**34**
Computational systems thinking for sustainable engineering				4
Digital data for planning transition				3
Ecological transition: from theory to practice I		B	C	3
Economic growth and sustainability I				3
Energy supply, economics, and transition				2
Green spaces - concepts and planning approaches			C	3
Introduction to BIM (Building information modeling)				3
Lifecycle performance of product systems				3
Multi-scale territorial design and analysis				3
Planetary health				4
Policy and law design				3
Social justice and transition in urban context			C	3
Spatial and regional economy			C	3
Sustainability assessment of urban systems		B		3
Systems approach for urban analysis				3
Technology, sustainability and public policy				4
Transition analysis and governance (urbanism and territories)				3
Transportation infrastructure in transition				3
Urban demography				3
Urban ethnography and (survey) research				3

Specializations				**30**
City and mobility	A			3
Decision-aid methodologies in transportation	A			4
Fundamentals of traffic operations and control	A			3
Future of railway infrastructure and services	A			3
Image processing for earth observation	A	B	C	4
Infrastructures de transport I	A			3
Infrastructures de transport II	A			3
Land management and ground law	A	B		3
Statistics for data science	A			6
Transportation economics	A			3
Urban public transport systems	A			3
Behind/beyond future cities		B		3
Building design in the circular economy		B	C	3
Climate and water sensitive urban design		B		4
Economic growth and sustainability II		B		3
Energy geostructures		B		4
Energy supply, economics and transition		B		2
Life-cycle assessment in energy systems		B		3
Material and energy flow analysis		B		4
Participation in urban and landscape development		B		3
Planning for urban resilience		B		3
Recycling of materials		B		2
Science of climate change		B	C	4
Urban Sociology		B	C	3
Sustainability assessment of urban systems		B		3
Urban Green&Blue infrastructure and global warming		B		3
Urban hydraulic systems		B		3
Air pollution			C	5
Comfort and architecture: sustainable strategies			C	3
Digital epidemiology			C	4
Energy and comfort in buildings			C	5
Exploratory data analysis in environmental health			C	4
Occupational and environmental health			C	3

Career prospects

Graduates' versatility and expertise allow them to pursue a wide variety of positions in urban, environmental and territorial planning:

- Managers of sustainable urban and territorial planning
- Developers of public policies and strategic development
- Project managers in large-scale urban transition projects
- Consultants for transportation and mobility operators and urban infrastructure providers
- Consultants in medical institutions focused on health and urban environments
- NGOs focused on sustainable urban practices and transitions
- R&D in a research institution or a university

School of Architecture, Civil and Environmental Engineering
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