

MASTER OF SCIENCE URBAN AGRICULTURE & GREEN CITIES

COURSE CATALOGUE SEMESTER I & II



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Master of Science Urban Agriculture & Green Cities

The Master of Science Urban Agriculture & Green Cities aims to train future executives and engineers in the field of urban agriculture and its related sciences in order to ensure the future transition to the green, resilient and intelligent cities.

This master program has been developed in accordance with the innovative approaches of integrated planning and management strategies for urban areas designed to enhance the well-being of citizens and society.

Urban agriculture creates value and opportunities by efficiently using the assets of sustainability such as climate adaptation, energy transition, circular economy, the use of harvested rainwater or grey water, and there is a specific need for executives and engineers with specific knowledge of these issues.

Target Skills

- To develop knowledge and skills in specific areas, issues, and problems concerned with urban agriculture, urban food systems, urban resiliency and related areas.
- To develop technical skills needed to integrate multifunctional and innovative projects around plants, resiliency, and sustainability in the urban development plans, construction standards, and project design.
- To have a deep understanding of the tools and methods that can be applied to the analysis of the current status of cities and regions, and the perspective for future change regarding food systems and natural resources.
- To be able to assess and handle complexities of urban development in a local and regional perspective and relate them to their agricultural, social, economic, environmental and political context.
- To establish and/or develop the skills needed to organize and lead multi-disciplinary groups with experts, including planning, setting up, coordinating, team working, business development, problem-solving skills, etc.

Careers

- Project manager specialized in urban farming and plant innovation
- Policy advisor on sustainable living and building
- Designer, architecture, urbanist specialized in green cities
- Consultant/ entrepreneur/researcher specialized in the deployment of sustainable planning techniques, methods and strategies in urban areas

Course Program

The MSc Urban Agriculture & Green Cities, count 96 ECTS and consists of two terms – semester - coursework and one term for the degree project, together 18 month. Courses are taught in English.

Semestre I	Knowledge acquisition (35h, 4 ECTS) General introduction to urban field, urban planning at city scale, urban planning at building scale, short talk about plants' biology & botany		Professional assignement I (4 WEEKS, 5 ECTS)
	Urban Ecology (45h, 4 ECTS) Concepts, principles, applications; Biodiversity and urban resilience, Cities and climate change	Self-and group awareness (20h, 2ECTS) Team building, participative management, LINC	
	Urban planning & Architecture I (45h, 4 ECTS) Territory and public goods, urban planning and innovation, Landscape project in urban planning, Urban project phases, Ecological urban design, etc	Cartography (30h, 4ECTS) Data analysis, concepts and techniques	
	Urban Agriculture I (35 h, 3ECTS) Concepts, principles and applications; urban agriculture techniques; urban agriculture and planning; etc	Sociology and urban planning (20h, 2 ECTS) participative planning, urban social development	
		Legislation (20h, 2 ECTS) Urban planning law, environmental law	
		Field Experiments I (25h, 3ECTS)	

SEMESTER I			
	Description, contents, learning-outcomes		ECTS
SPECIFIC KNOWLEDGE ACQUISITION	<p>The objective of this course is to smooth the levels of knowledge among different student populations of the MSC program, that may have different backgrounds: architecture, urban planning, geography, agronomy and biology, etc.</p>	35 Hours lecture and tutorial	4 ECTS
	<ul style="list-style-type: none"> • A Project in The City – Theory & Practice 		
	<p>This course will be held in the beginning of the academic year as an introduction to urban planning projects for agronomy and biology students. It aims the understanding of different urbanism keywords and concepts: actors of the city, density, district, mobility, monuments, process, project design, real estate developer, compacity, density, eco neighbourhood, etc.</p> <p>The course focuses on the introduction to what to be in architectural office, by presenting a broad view of three architectural projects, and the analysis of a European megapole: London and Paris in one hand, and an American megapole: Los Angeles and Miami on the other hand.</p> <p>The main outcomes of this course is to be able to understand the objectives and main steps of an urban planning project and feasibility studies.</p>		
	<ul style="list-style-type: none"> • Plant Biology & Cultivating practices <p>This course will be held in the beginning of the academic year. It aims an introduction to plant biology for <i>“Architecture, Planning” students</i> <i>It aims an update and an introduction to plant biology and cultivation practices.</i></p> <p>After completion of the course the student is expected to be introduced and to understand different aspects related to plant biology and botany (structure and functioning of plant population in ecosystems), biogeochemical cycles (the water cycle and vegetation, the carbon cycle, the nitrogen cycle); and the cultivation practices.</p>		

<p>URBAN ECOLOGY</p>	<p>Description, contents, learning-outcomes</p> <p>Upon successful completion of the course, Students will be able to:</p> <ul style="list-style-type: none"> • Describe the global urban ecological issues that are a concern now and will need to be addressed in the coming decades. • Evaluate first-hand the problems and consequences of humans becoming the dominant organisms in the natural environment. • Make recommendations regarding further actions based on their knowledge of how global ecological issues are being solved on the local level. • Apply scientific knowledge and methods in analyzing different aspects of environmental issues into urban area of study <p>Content</p> <ul style="list-style-type: none"> • Introduction to biodiversity and scientific ecology • Urban Ecology: concepts, principles and applications • Ecological engineering: concepts, principles and application to the urban environment • Biophilic cities: history and concept of biophilia • Biodiversity and climate change mitigation: nature-based solutions in the urban environment, • Biodiversity and green spaces: differentiated management principles • Soil and urban biodiversity: main issue and ongoing projects • Urban project integrating biodiversity design 	<p>45 hours, lecture and tutorial</p>	<p>4 ECTS</p>
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URBAN AGRICULTURE (Section I)	Description, contents, learning-outcomes On completion of the course, the student should be able to: <ul style="list-style-type: none"> • Account for key concepts and approaches of the implementation of urban agriculture projects as real territorial projects • Critically review and relate to different examples of urban farming in a global context, • Apply relevant theories and examples concerning sustainable urban agriculture in a local context • Account for the productive, environmental and human dimension (social, organizational, political) of urban farming projects Content <ul style="list-style-type: none"> • Urban, peri-urban farming and local food system – techniques, farming practices, work organization, resources management, agricultural rotation and association • Urban gardening practices (principles and techniques) • Municipal urban farming policy: comparative studies in various cities of municipal programs to encourage urban gardening (Paris, Montreal, New York, Lisbon, Seville, ...) • Diversity of the functions and types of community gardens in industrialized countries • Diversity of amateur farming practices • Green roof and tops (advantages and disadvantages, typology of roofs, technical key points: Waterproofing, Drainage, Substrate, Watering, Safety, Vegetable Palette; Cultural monitoring) 	35 hours Lecture, seminar, study trip - the course continues to a practical, applied focused part where the student completes a final, independent project within the field. The course ends with project presentations and a project report.	3 ECTS
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<p>PLANNING & URBAN DESIGN (Section I)</p>	<p>Description, contents, learning-outcomes</p> <p>On completion of the course, the student should be able to:</p> <ul style="list-style-type: none"> • Account for key concepts and operational principles of sustainable urban planning project, • Understand different perspectives and approaches of landscape and urban design (Anglo-Saxon and French approach) • Understand the field of landscape architecture in an international context • Account for planning policy context • Apply relevant approaches of the design process, implementation and construction • Understand the scales of intervention: design /strategic planning <p>Content</p> <ul style="list-style-type: none"> • The sustainable city: adaptation and mitigation strategies to climate change, • Theories of ecology, the emergence of ecological urban design in planning movement and landscape architecture, • The Athens Charter: environmental impact and social cohesion, • The role of mobility on urban planning/ Public transportation and urban biodiversity, • Policies and actions for sustainable cities: a focus on the example of Copenhagen, • The country, the city and the place of nature, • Policy context and implementation of urban design and landscape projects, • Landscape Character Assessment and Visual Impact Assessment as a design, • Green Infrastructure and Strategic Masterplanning, • Contemporary landscape projects: practices, figures and landscape movements, • Landscape Urbanism, • Landscape Design. 	<p>45 hours Lecture, seminar, study trip - student completes a final, independent project within the field. The course ends with project presentations and a project report</p>	<p>4 ECTS</p>
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SOCIOLOGY & URBAN PLANING	<p>Description, contents, learning-outcomes</p> <p>At the end of this course, student should be able to:</p> <ul style="list-style-type: none"> • Understand the social sciences approaches applied to the study of the city, their particularities and their methods • Account for the nature and changing character of the city and the urban experience - including the larger social, political, and economic dynamics of urban change • Apply the tools of the human and social sciences as part of a territorial diagnosis <p>Content</p> <ul style="list-style-type: none"> - Urban geography: the birth of urban planning (definition of the city as a system, geographical division and functionalities) - Urban sociology: School of Chicago and contemporary analysis (analysis of the city as a living organism, interactions of communities, study of margins, etc.) - Urban anthropology: Ulf Hannerz and recent works (analysis of social interactions, roles, and networks of city dwellers) - Social sciences at the service of territorial diagnosis: what tools, what methods? (Consultation: public debates and workshops; Cartography; The urban walk; The participant observation; - The ethnographic interview; Statistical studies; etc) 	<p>20 hours, Lecture and seminar that will involve intensive discussions of assigned readings. Students will be encouraged to discuss how the theoretical and practical concerns that have preoccupied urban sociologists can be applied to urban agriculture projects</p>	<p>2 ECTS</p>
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<p>URBAN REGULATIONS</p>	<p>Description, contents, learning-outcomes</p> <p>This course aims to provide students with knowledge of:</p> <ul style="list-style-type: none"> • The multiple issues arising from different legislation governing the Urbanism / Environment / Risk interface; • The articulation between the various legal devices; the analysis of their effective consideration and limitations in the planning documents. • The different public policies approaches and the purposes of the regulatory tools, • The main stakeholders involved in the risk management within the urban environment (natural, technological, sanitary risks). • Local public environmental policies through two issues: climate change and public health <p>Content</p> <ul style="list-style-type: none"> - The fundamentals of urban planning and environmental rights - The hierarchy of legal norms - Planning documents in the french context (SCOT, PLU / PLUi) - Urban heritage protection and enhancement - Dealing with natural and technological risks - Climate Change - Mitigation / Adaptation: (What public action and means? ; Environmental inequalities) - Health risks and their integration into the local political agenda 	<p>20 hours, lecture and seminar taught in French</p>	<p>2 ECTS</p>
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<p>GEOGRAPHIC INFORMATION SYSTEM</p>	<p>Description, contents, learning-outcomes</p> <p>Upon completing this class, students will be able to:</p> <ul style="list-style-type: none"> - Understand the fundamental concepts of geographic information systems and their differences from other types of information systems. - Utilize modern industry-standard GIS software for conducting basic GIS analyses and producing cartographic output - Conduct studies typically carried out in GIS including site selection, analysis of spatial/temporal processes, geocoding and point pattern analysis, and corridor studies <p>Content</p> <p>This course examines in detail the fundamentals of Geographic Information Systems (GIS) and their applications. These systems are often the core of local (city, county) government operations. They are rapidly adopted governments to manage operations from highway planning to environmental resource conservation, and are playing a major role in businesses as diverse as market research, site selection, real estate, civil engineering, and geophysical exploration.</p> <p>The course will comprise both lecture and lab. The lab component will focus on the use of ArcGIS software in a Windows XP environment.</p>	<p>30 hours lectures and lab.</p>	<p>4 ECTS</p>
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FIELD EXPERIMENTS (Section I)	Description, contents, learning-outcomes This module integrates a field trips in order to visualize the diversity of forms of agriculture in urban areas <ul style="list-style-type: none"> - Urban microforms visits - Permacultural farm visits - High-tech sites of agri-urban spaces visits - Meeting of economic and associative urban farming actors Some other sites (2017/2018) <ul style="list-style-type: none"> - The Ile-de-France GAB - Parisian family gardens (National Federation of Family Gardens and the association Seeds of Gardens) - Veni-Verdi in the 20th arrondissement - The Urban Peasant in Romainville (93) - Pépin Production in the 20th arrondissement - Topager in the 15th arrondissement - Urban Orchards in the 2nd arrondissement - Visit of Saint Cyr l'Ecole urban farming demonstrator 	25 hours of field visits mainly in the Paris Region. Guest speakers, local leaders deeply involved with urban agriculture in the region, will offer their insights on practical aspects of urban farming projects implementation	2 ECTS
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TOOLS FOR PROJECT MANAGEMENT	<p>Description, contents, learning-outcomes</p> <p>At the end of this course student should be able to:</p> <ul style="list-style-type: none"> • Learn how to present the key components of a project in a clear, concise, logical and systematic way by answering the following questions: what the project is going to achieve? What activities will be carried out to achieve its outputs and purpose? What resources (inputs) are required? ; What are the potential problems which could affect the success of the project?; ect. • Be able to function as an effective member of a decision making team. <p>Content</p> <ul style="list-style-type: none"> • Logical Framework Analysis (project framework) • Team building skills (This course examines the basics of building teams in a global business environment. Topics include: the team building process, workplace culture, online and interpersonal team communications, problem-solving and group decision-making, personality differences within teams, and motivation. Students will focus on team roles, creating effective teams, ect. 	15 hours, lecture and workshop	2 ECTS
PRACTICAL ASSIGNMENT I	<p>Description, contents, learning-outcomes</p> <p>This module aims to introduce students to the approach of designing the urban farming, and its different stages.</p> <p>It is organized as collective "workshops" on the total duration of the first semester. The main objective of this project is to put the students-engineers in professional situation and to answer a real command formulated by professionals in a limited time with obligation of results. Topics covered may vary from of the sustainable development of the territories, the environment, urban planning to urban agriculture. .</p> <p>During the semester, and from October 2017, this project will allow students working in small groups (from 3 to 4) to consolidate their skills through concrete case studies. Finally, this assignment will lead to the delivery of a written report, as well as an oral presentation.</p>	70 hours – collective workshop	6 ECTS

Semester II

Smart cities & Eco-Innovations (90, 8 ECTS)

Technologies for Smart Cities, energy efficiency; positive energy building, circular economy (life-cycle performance); Eco-districts/Green building; water shed management, etc.

Urban planning & Architecture II (40h, 4ECTS)

Green Architecture, Ecodesign, Building and planning with biodiversity

Urban Agriculture II (30 h, 3ECTS)

Vertical farms design. Aquaponic and hydroponic cultivating techniques. Soil and plantation, Greenhouse production (light management: use of LED light)

Urban Food Systems (35h, 3ECTS)

Urban food system planning, farm to fork production, Consumption: Health and Nutrition, Urban Food Production and Distribution

Innovation Management (20h, 2ECTS)

*Approaches & Strategies
A journey as an entrepreneur in urban agriculture*

Production & Value Chain (20h, 2CTS)

Value chain analysis - Production & Quality

Field Experiments II (25h, 3ECTS)

Professional assignment II (4 WEEKS, 5 ECTS)

SEMESTER II			
	Description, contents, learning outcomes	Hours	ECTS
SUSTAINABLE CITIES & ECO-INNOVATION	<p>Innovative cities have demonstrated that, supported by the appropriate strategic approach, they are able greatly to enhance their resources efficiently by realizing the same value from much smaller and renewable resources base, while decreasing harmful pollution and unnecessary waste. By doing this they increase the quality of the lives of their citizens, enhance their economic competitiveness and resilience and creates an enduring culture of sustainability.</p> <p>This group of module deals with a multitude of innovative approaches and tools for integrated urban planning project and that has significant importance for smart and ecological cities.</p>	90 hours combining lecture, seminar and lab.	8 ECTS
	<p style="text-align: center;">➤ <u>Course 1: Introduction to green infrastructure (15 hours)</u></p> <p>The objective of the course is to introduce students to the fundamentals of eco-construction and show them the main lines of work to improve the environmental performance of a building throughout its life cycle. The lectures will be complemented by two tutorials during which students will reflect on the environmental optimization of two stations of the Grand Paris Express.</p> <p>Content</p> <ul style="list-style-type: none"> - Fundamentals of eco-construction; - Focus on the passive house; - Energy consumption and GHG emissions; - Sustainable Materials: Recycling, Local Production and Labelling; - Environmental management of works: waste management, protection of the environment and nuisance towards residents; - Tools for optimizing the ecodesign of a building: dynamic thermal simulations, aerodynamic studies, LCA 		
	<p style="text-align: center;">➤ <u>Course 2: Smart Cities strategies (15 hours)</u></p> <p>Smart cities is a rapidly growing concept which is viewed as a solution for cities to better cope with key societal challenge like energy, agriculture, water, mobility and social innovation through extensive and</p>		

	<p>effective use of big data. This, in turn, calls for new modes of – smart – governance, with the active involvement of a wide diversity of public, private and citizen organization.</p> <p>In this course smart cities are being studied through the following themes:</p> <ul style="list-style-type: none"> a) Urban metabolism and resilient city b) Future energy: Smart Grids (e.g, electricity) c) Digital city (big and open data, geo informatics): What can we do with available information? How can we combine all these data for infrastructure, can we increase the comfort of living in smart cities? d) Social Innovation (new way if innovation and behavioral change), how can we create smart rules for smart cities 		
	<p style="text-align: center;">➤ <u>Course 3: Energy performance of buildings & Renewable energy design (15 hours)</u></p> <p>This module will introduce the basic concepts of building energy performance and explain the skills and practical considerations.</p> <ul style="list-style-type: none"> a) Environmental considerations for energy production (Policy, emission factors etc) b) Renewable energy for green building design c) Energy management fundamentals. <p>Students learn the basics of electricity, power and energy, and relate that knowledge to both passive and active solar energy and other renewable energy systems.</p> <p>Topics such as passive solar heating, photovoltaics, solar water heating and co-generation are examined.</p>		
	<p style="text-align: center;">➤ <u>Course 4 – Circular economy and urban development (15hours)</u></p> <p>Objective : learning fundamental principle - historic, Methodologies, study case</p> <p>This course explores the circular economy: how businesses can create value by reusing and recycling products. How designers can come up with amazing clever solutions, and how we can make circular economy happen in accordance with setting up urban farming projects.</p> <p>Students will learn how to experience how to rethink the economic system we are experiencing every day.</p> <ul style="list-style-type: none"> - What is the circular economy? How can the circular economy provide solutions to the challenges our current, linear economy brings? Roots of the circular economy: industrial ecology, cradle to cradle, slow design movement and biomimicry. - Longer lasting product and remanufacturing: The smaller the loop, the greater the profitability of the system. We look at product life extension through the eyes of designers and entrepreneurs. Remanufacturing enables companies to recapture value on a product 		

	<p>or component level. It is currently being rediscovered as a promising business opportunity. This topic will be discovered from a researcher an entrepreneur point of view.</p> <ul style="list-style-type: none"> - Waste equal food: How we can take inspiration from nature, when redesigning the way we deal with waste? Presentation of circular case study and ways to identify opportunities for change in new building projects? <p>course learning outcomes: on completion of this course student will be evaluated on how well they demonstrate:</p> <ul style="list-style-type: none"> - Knowledge & Understanding: Appreciate the key roles of strategic thinking, hypothesis, methodology, critical analysis, scrutiny and synthesis. - Practical, research & independent learning skills: analyse, evaluate and record data from a wide range of primary and secondary sources, as a means to generate concepts, in an appropriate and professional format. - Transferable or Key Skill: Use methodology and knowledge to contribute to research goals 		
	<p style="text-align: center;">➤ <u>Course 5: Urban Water shed management (15 Hours)</u></p> <p>This module presents a comprehensive approach to urban watershed management, and covers themes such as drinking water, waste water, riparian buffers and urban stream health, climate change adaptation, and more. Content</p> <ul style="list-style-type: none"> - The urban water cycle: drinking water, wastewater, rainwater, treatment and environmental impacts - The urban cycle of water revisited in the alder of the sustainable city - Decentralized management of water in the city - The link between water and vegetation in the city: green spaces, urban agriculture, wetlands. - Water, vegetation, and global warmin 		
	<p style="text-align: center;">➤ <u>Course 6 - Building information modeling – BIM (15 hours)</u></p> <p>Computer 3 D modeling is rapidly becoming an important in sustainable building design. Students are introduced to – Autodesk Revit Architecture, where they are provided hands-on experience learning the basic creation and editing commands.</p>		

URBAN AGRICULTURE (Section II)	Description, contents, learning-outcomes <p>The aim of this module is to present a comprehensive approach of new technologies deployed within the vertical farming projects Students will also be introduced to the design of vertical farms where the sources such as electricity, low level of water availability are may or may not be occurred in the future days. At the end of this module student will be able to account for integrated technology in urban farming projects which is one of the most advancement in the vertical farming technique where the system has to be completely controlled with the computers and other embedded systems such as sensors etc, but in the urban farming system the integrated system has to analyse water, air and mineral maintenance.</p> <p>Content such as:</p> <ul style="list-style-type: none"> - Vertical farms design - Aquaponic and hydroponic cultivating techniques - Soil and plantation, alternative rainwater management; - Plant Disease and pests - Substrates and fertilizers - Greenhouse production (light management: use of LED light) - Soil remediation 	30 hours lectures, lecture, lab, and field experiments.	3 ECTS
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URBAN FOOD SYSTEM	<p>Description, contents, learning-outcomes</p> <p>The current debate on food security has arisen several questions about the quantity and the quality of food provided in urban food system. Local institutions are now more and more prone to adopt urban food policies in order to drive the sustainability the local food system, due to the potential multifunctionality of food. Peri-urban farming system is now more and more included in such plans.</p> <p>The objective of this module is to analyze the main dynamic regarding the integration of the periurban farming system and the urban food system with a territorial approach and in an urban food security perspective</p> <p>By the end of the course students will be able to:</p> <ul style="list-style-type: none"> - Identify and critique the major issues and debates on urban food systems and periurban farming systems - Detect the main constraints of the integration of urban food systems and periurban farming systems - Characterise the spatial networks of urban food system's actors <p>Content</p> <ul style="list-style-type: none"> - Main agronomic approaches and scales in analysing farming activities: cropping system, farming system, land use system, territorial system - Sustainability and resilience of agriculture in urban and periurban environment, main results from research studies - Main approaches in analysing local food system: SYAL, foodshed, urban food system, alternative food networks - Debate on urban food governance and urban food security: the urban food policies - The contribution of periurban farming system to local food system: taking into account the different perspectives of farmers and food system's actors in a case study analysis - The specific case of the public school food procurement: integration of the farming system in a urban local food system - The methods at disposition to analyse the link of the farming system to the food system. 	35 hours lectures, and field experiments	4 ECTS
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VALUE CHAIN ANALYSIS	<p>Description, contents, learning-outcomes</p> <p>The course addresses various models for sustainable local economic development and you learn how to design a public private partnership for development program including the organization of multi-stakeholder-meetings.</p> <p>After completing and passing the course, students should be able to</p> <ul style="list-style-type: none"> - explain and give an account of fundamental concepts, models and methods relating to logistics and the control of supply chains, - apply these models, methods and concepts to supply chains within the fields agri-food system , - give an account of the development within sustainable logistics systems and the control of supply chains, analyse the sustainability of supply chains within the fields of agri-food system 	20 hours	2 ECTS
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INNOVATION MANAGEMENT	<p>Description, contents, learning-outcomes</p> <p>This course aims to equip students with an understanding of the main issues in the management of technological innovation and an appreciation of the relevant skills needed to manage innovation in urban planning projects.</p> <p>It provides evidence of different approaches based on real-world examples and experiences of urban farming projects'. This course will enable students to develop an understanding of analytic frameworks for managing the innovation process.</p> <p>In particular students will be able to examine the patterns and sources of technological change and the mechanisms for capturing the economic benefits from innovation as well as to identify the strategic and organizational challenges involved in managing innovation related to urban farming projects.</p> <p>Content</p> <ul style="list-style-type: none"> ➤ Introduction to the professional urban farming <ul style="list-style-type: none"> • Stakeholders analysis • Technologies overview (hydro/aqua/biaponics, permaculture beds) • Market analysis (indoor/outdoor/vertical solutions) • SWOT analysis ➤ A journey as an entrepreneur in urban agriculture <ul style="list-style-type: none"> • How to become an entrepreneur • How to find a co-founder • Lean Start-up and Customer Factory • Business case : myfood farm plus « La Ruche Qui Dit Oui » ➤ Deep dives on technologies <ul style="list-style-type: none"> • Greenhouse climate control • Greenhouse management • Sensors, automation, Internet of Things ➤ Other topics : Digital Strategy / CRM 	20 hours lecture and tutorials	2 ECTS
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PLANNING & URBAN DESIGN (Section II)	<p>Description, contents, learning-outcomes</p> <p>Could urban fabric and agricultural frame be superimposed? Could we conceive nourishing cities?</p> <p>After completing and passing the course, students should be able to:</p> <ul style="list-style-type: none"> • Assess and handle the analyses of European cities, • Account for urban sprawl, and the modern post-war city that gave new dimensions to the European city: new urban fabric have created blind spots that many small and medium-sized towns no longer know how to use. • Address the issue of evolving these frames towards a local and efficient agricultural production quality? <p>Content</p> <ul style="list-style-type: none"> - Analysis of the modern post-war city in Europe and the Eastern countries. - Notions of landscapes and representation of nature in the city: we start from the paradigm of separation between the city of services and the nourishing countryside of cities. - Choice of two cities and their analysis. - Urban fabric and agricultural frame: can they be superimposed. - Project on the impact of agricultural production on the transformation of a territory, a neighborhood, an environment. 	40 hours lecture, workshop, data and content productions.	4 ECTS
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FIELD EXPERIMENT II	<p>Description, contents, learning-outcomes</p> <p>The aim of this course, based on experimental work, is to provide students with:</p> <ul style="list-style-type: none"> - Knowledge about different methods for materials selection - experience from case-studies with the methodology for systematic selection of materials, design methods for components or products, for creating buildings or service that meet the world's need to reduce human impact on ecological system. - Knowledge about the connections between environment, energy and materials selection for different products during their life-cycle. - Knowledge about methods for design of processes, design thinking, user experience and products with regard to sustainable development functionality or profitability. <p>Module outcomes: on completion of this module student will be judged on how well they demonstrate :</p> <ul style="list-style-type: none"> - Knowledge & Understanding: appreciate the central roles of narrative scenario, conceptual thinking, experimentation, risk-taking, design and development, technology, planning and evaluation in eco-design practice. - Practical, research & independent learning skills: adaption of conceptual idea into reality, Implementation. Reflect upon the whole journey of personal practice and communicate both process and final outcome at a professional level. - Transferable or Key Skill: Use a variety of forms of practice based research, communication and employs them appropriately in design effective project presentation according to the needs of the situation or context. 	<p>24 hours workshop Evaluation Clarity of the 2d presentation: a well-structured and logical work file report that successfully includes correctly referenced text, illustrations, charts, data and / or graphics.</p>	<p>3 ECTS</p>
PRACTICAL ASSIGNMENT II	<p>Description, contents, learning-outcomes</p> <p>This module aims to introduce students to the approach of designing the urban farming, and its different stages. It is organized as collective "workshops" on the total duration of the first semester. The main objective of this project is to put the students-engineers in professional situation and to answer a real command formulated by professionals in a limited time with obligation of results. Topics covered may vary from of the sustainable development of the territories, the environment, urban planning to urban agriculture. .</p> <p>During the semester, and from October 2017, this project will allow students working in small groups (from 3 to 4) to consolidate their skills through concrete case studies. Finally, this assignment will lead to the delivery of a written report, as well as an oral presentation.</p>	<p>70 hours</p>	<p>6 ECTS</p>

Thesis project & Company placement

Each student has to carry out specific practical assignment, in a self-responsible manner. The theme of the placement project should be related to the field of studies and chosen subjects that are in line with the topic of the MSc. The internships last at least 5 months and validates the master.

Admission

Selection will be based on academic background (Bachelor degree or equivalent) in a relevant field of science (plant Science, agronomy, landscape architecture, architecture, urban-planning, geography, etc.).

A motivation interview is mandatory.

Start of the program: 1st week of October (please be aware of visa processing times).

Fees and Accommodation

Annual fees: 8100 €

Please contact us for specific enquiries.

Accommodation is easily available in Rouen Campus