MASTER IN ENVIRONMENT AND SPATIAL PLANNING

Main Language of Instruction:
French ☑ English ○ Arabic ○

Campus Where the Program Is Offered: CSH

OBJECTIVES

The Master in Environment and Spatial Planning equips specialists with the skills to diagnose, identify, and analyze environmental issues, assess their societal impacts, and propose suitable solutions with a focus on sustainable development.

PROGRAM LEARNING OUTCOMES (COMPETENCIES)

- Defending research findings
- Incorporating spatial and temporal dimensions in understanding the human-environment relationship
- Integrating expertise in geomatics
- Conducting research in geography and environmental studies
- Committing to a process of lifelong learning.

ADMISSION REQUIREMENTS

Candidates must hold a Bachelor's degree or an equivalent qualification in one of the following disciplines: Geography, Sciences (Physics, Chemistry, And Biology), Engineering (Agronomy, Surveying, etc.), or one of the Social Sciences.

COURSES/CREDITS GRANTED BY EQUIVALENCE

Holders of a recognized equivalent degree may receive up to 60 credits through equivalence.

PROGRAM REQUIREMENTS

120 credits: Required courses (112 credits), Institution's Elective Courses (8 credits)

Required courses (112 credits)
Advanced Methodological Seminar – Master in Geography, Environment and Spatial Planning (2 Cr.). Climatology and Microclimatology (4 Cr.). Economy and Sustainable Development (3 Cr.). Environmental Modeling (6 Cr.). Geographic Databases (6 Cr.). Georisks (3 Cr.). Impact Study (4 Cr.). Integrated Watershed Management (6 Cr.). Internship/Other Activities – Research Thesis - Master in Geography, Environment and Spatial Planning (3 Cr.). Photo-Interpretation II (6 Cr.). Pollution: Urban, Industrial, and Agricultural (2 Cr.). Remote Sensing: Data, Processing, and Analysis II (6 Cr.). Research Thesis – Master in Geography, Environment and Spatial Planning (20 Cr.). Spatial Analysis and GIS (6 Cr.). Spatial Interaction Analysis (4 Cr.). Specialized Environmental Seminars (2 Cr.). Technological Risks (3 Cr.). Urban Systems: Functioning and Dynamics (3 Cr.). Urbanization and Environmental Challenges (3 Cr.).

Institution's Elective Courses (8 credits)
In the 1st semester:
Environmental Law (3 Cr.). Environmental Management for Businesses and Communities (3 Cr.). Environmental Policies (Strategies) (4 Cr.). Environment and Health (2 Cr.). Professional Project Development in Environmental Settings (2 Cr.).

In the 2nd semester:
Environmental Quality: Standards and Norms (4 Cr.). Soil (3 Cr.). Statistics for Environmental Sciences (4 Cr.).

SUGGESTED STUDY PLAN

Semester 1

Code	Course Name	Credits
048CLCPM3	Climatology and Microclimatology	4
011GEB6M1	Integrated Watershed Management	6
011GEIPM4	Photo-Interpretation II	6
048POCPM1	Pollution: Urban, Industrial, and Agricultural	2
011GEASM1	Spatial Analysis and GIS	6
011GEFDM1	Urban Systems: Functioning and Dynamics	3
	Elective Course	3
	Total	**30**

Semester 2

Code	Course Name	Credits
011GEMEM2	Environmental Modeling	6
011GEB2M2	Geographic Databases	6
011GEGRM2	Georisks	3
011GEAIM2	Spatial Interaction Analysis	4
011GESEM2	Specialized Environmental Seminars	2
011GERTM2	Technological Risks	3
011GEUDM2	Urbanization and Environmental Challenges	3
	Elective Course	3
	Total	**30**

Semester 3

Code	Course Name	Credits
011GEEDM3	Economy and Sustainable Development	3
048EICPM3	Impact Study	4
011GEMEM3	Thesis – Master in Geography, Environment and Spatial Planning	20
	Elective Course	2
	Total	**29**

Semester 4

Code	Course Name	Credits
011GES2M4	Advanced Methodological Seminar –Master in Geography, Environment and Spatial Planning	2
011GESTM1	Internship/Other Activities – Research Thesis - Master in Geography, Environment and Spatial Planning	3
011GETEM2	Remote Sensing: Data, Processing, and Analysis II	6
011GEMEM4	Research Thesis – Master in Geography, Environment and Spatial Planning	20
	Total	**31**

COURSE DESCRIPTION

011GES2M4 **Advanced Methodological Seminar – Research Thesis - Master in Geography, Environment and Spatial Planning** **2 Cr.**

This interactive course addresses the challenges faced by students enrolled in the master's program. It offers practical, technical, analytical, and conceptual guidance.

011GES2M4 **Advanced Methodological Seminar – Master in Geography, Environment and Spatial Planning** **2 Cr.**

048CLCPM3 **Climatology and Microclimatology** **4 Cr.**

This course delves into the evolving nature of Earth's climate, focusing on its geographical dimensions. Students will examine how climate is intrinsically linked to specific locales, whether a region, city, slope, or street, and explore its crucial role in shaping environmental issues such as air quality, water resources, and natural hazards. This course delves into a topic that is often treated superficially but is, in reality, highly complex.

011GEEDM3 **Economy and Sustainable Development** **3 Cr.**

048EICPM3 **Impact Study** **4 Cr.**

This course provides students with the knowledge required to develop an impact assessment report.

011GEMEM2 **Environmental Modeling** **6 Cr.**

This course explores the rise of models in scientific disciplines, focusing on their role and impact in the generation and formalization of knowledge. Students will examine how models, designed to provide scientific answers, shape the choices made during their creation. They will understand how models impose specific perspectives, approaches to reality, and levels of spatial and temporal perception. This course will also cover the validity domains, preferred applications, advantages, and limitations of different types of models, emphasizing that every study represents a selective and oriented view of reality.

011GEB2M2 **Geographic Databases** **3 Cr.**

This course aims to familiarize students with designing a relational geographic database.

011GEGRM2 **Georisks** **3 Cr.**

This course trains students in incorporating georisks into planning projects, particularly in Lebanon, where natural risk issues such as earthquakes and landslides, related to the Earth's internal dynamics, are acute.

011GEB6M1 **Integrated Watershed Management** **6 Cr.**

This course is designed for Master students in Geography, Research Thesis - Environment and Spatial Planning. It focuses on the rational management of water resources through watershed management. Students will gain essential knowledge about water resources, associated environments, and the impact of human activities. This course also aims to provide an integrated approach to managing these elements effectively.
By the end of this course, students will be able to:
- Apply fundamental concepts
- Develop projects

011GESTM1 **Internship/Other Activities – Research Thesis - Master in Geography, Environment and Spatial Planning** **3 Cr.**

This internship emphasizes practical and applied work as an essential part of academic training in environment and spatial planning. To better engage with the realities of the Lebanese context, students are required to complete an internship with an environmental or planning organization starting from their first year of study.

011GETEM2 Remote Sensing: Data, Processing, and Analysis II 6 Cr.

This course introduces various methods for thematic image segmentation, including analysis and enhancement of results. Students will also learn how to utilize these results effectively.

011GEIPM4 Photo-Interpretation II 6 Cr.

This course deepens students' understanding of photo-interpretation techniques, particularly aerial photography, through:

- mastering the techniques and conditions of capturing aerial images, learning stereoscopic reading of aerial photos, and acquiring photogrammetric measurement skills
- identifying visible objects or forms in the photos and understanding their origins in anthropic, geomorphological, or biogeographical contexts
- mapping these forms and preparing reports on the studied landscapes' genesis.

048POCPM1 Pollution : Urban, Industrial, and Agricultural 6 Cr.

This course introduces the factors contributing to environmental degradation, including pollution sources and types, to better understand the spatial and temporal distribution mechanisms of pollution.

011GEMEM4 Research Thesis – Master in Geography, Environment and Spatial Planning 20 Cr.

The thesis should be an original study of a novel topic, underpinned by a theoretical approach and extensive bibliographic references. Students will demonstrate their mastery of research methodology and writing through their thesis, emphasizing analytical and synthesis skills.

011GEASM1 Spatial Analysis and GIS 6 Cr.

This course is designed for Master students in Geography, Research Thesis - Environment and Spatial Planning. It enables students to address spatial issues using spatial analysis tools, specifically Geographic Information Systems (GIS). Students will construct geographic databases, process and analyze spatially referenced information to study territories and conduct research in environment and spatial planning.
This course equips students with the skills to effectively "utilize geospatial tools" for spatial analysis, a key element in the geographic approach to addressing environmental and sustainable development issues.

011GEAIM2 Spatial Interaction Analysis 4 Cr.

This course focuses on the spatial dimension of phenomena, including the spatial organization of localized objects, their structure (spacing, area), functioning (flows, interactions), and dynamics (spatial event diffusion). It aims to equip students with the methods and tools necessary for studying fundamental spatial concepts.

011GESEM2 Specialized Environmental Seminars 2 Cr.

011GERTM2 Technological Risks 3 Cr.

This course trains future spatial planning professionals to incorporate technological risks into space management, as these risks pose significant costs to human societies and can have long-term consequences.

011GEMEM3 Thesis – Master in Geography, Environment and Spatial Planning 20 Cr.

The thesis should be an original study of a novel topic, underpinned by a theoretical approach and extensive bibliographic references. Students will demonstrate their mastery of research methodology and writing through their thesis, emphasizing analytical and synthesis skills.

011GEFDM1 Urban Systems: Functioning and Dynamics 3 Cr.

This course is designed for Master students in Geography, Research Thesis - Environment and Spatial Planning. It enables students to grasp the complex concept of urban systems, exploring their functioning and dynamics as a key to understanding the organization of geographical spaces.

011GEUDM2 Urbanization and Environmental Challenges 3 Cr.

This course is designed for Master students in Geography, Research Thesis - Environment and Spatial Planning. It enables students to understand major geographical phenomena: the current urban explosion, the rapid growth of large cities, recent urban transformations, and the resulting crises. It also addresses the significant environmental challenges cities face today, and explores the fundamental question of sustainable cities.