Department of Landscape Design and Ecosystem Management (LDEM)

Chairperson: Talhouk, Salma N.
Professors: Makhzoumi, Jala; Talhouk, Salma; Zurayk, Rami
Associate Professor: Farajalla, Nadim
Visiting Professor: Abunnasr, Yaser
Senior Lecturer: Battikha, George
Lecturers: El-Amine, Bachar; Hage, Sara; Halim, Nader; Melhem, Wissam; Mezher, Ramzi; Shibli, Rabih; Weltzien, Julie; Yazbek, Mariana
Instructor: Fabian, Monika
Assistant Instructors: Allam, Robert; Rachid, Dima

Undergraduate Program

The mission of the department is to graduate students that adopt a holistic view of landscape and environment; and are equipped with cutting edge scientific knowledge and creative, flexible skills for the design and management of natural and cultural resources. The essence of the department lies in its interdisciplinarity, equally in teaching and in research with applications in the Middle East region. To that end, the Department builds on the strong linkages established with other academic units within and outside FAFS.

The following design courses are part of the program requirement. There is a grade average requirement for: ARCH 100, LDEM 202, 204, 216, 228 241, 242 and 246. A student should maintain a combined average of 70 in two consecutive design studios within a given year. Failure to achieve this will result in repeating the design studio with the lower grade.

Course Descriptions

Core Courses for the BS Degree in Landscape Design and Eco-management

LDEM 200 Landscape Technical Drawing 4 cr.
An introduction to basic graphical skills in landscape design. Students learn to use different drawing tools and techniques, 2D-orthographic projections and 3D-drawings. Course material also covers understanding of scale and of shade and shadow.

Part time
LDEM 202  Landscape Design I 6 cr.
An introductory studio that guides students through the multi-layered meaning of landscape. Visual, perceptual, and spatial qualities are explored and alternatives for their graphic representation investigated. Prerequisite: ARCH 100.

LDEM 203  The Environment and Sustainable Development 3.0, 3 cr.
An introduction to sustainable development: concepts, goals, and economic and social aspects; environmental issues associated with development: natural resource management, population, food production, and energy; institutional framework; standards and policies; emerging technological applications and their impacts; resolution of environmental conflicts; and future trends.

LDEM 204  Ecological Landscape Design I 6 cr.
An introduction to the objectives and methodology of ecological landscape design in Mediterranean and semi-arid ecosystems. This course emphasizes the larger context for landscape design introducing students to environmental sustainability, use of native plant resources and, biodiversity conservation. Applications are selected from urban and rural public spaces. Prerequisite: LDEM 246.

LDEM 207  Landscape Architecture History I 3 cr.
The course is a survey of the evolution of structures, settlements and landscapes in the western world and the Mediterranean region including the Arab world. The period spans from origins of human societies, to the close of the medieval period. Students will be assessed on a research papers and a project of individual interest as well as written exams. Introduction to the discipline of landscape architecture and architecture through the analysis of the built environment, concepts and themes in design; focusing on historical examples.

LDEM 208  Landscape Architecture History II 3 cr.
The course is a survey of the evolution of structures, settlements and landscapes in the western world and the Mediterranean region including the Arab world. The period spans from the Renaissance to the present. Students will be assessed on a research papers and a project of individual interest as well as written exams. Examination of the history of landscape architecture since Frederick Law Olmsted and the evolution of the landscape architecture status with emphasis on environmental planning and activism; town planning and the design of infrastructure, park design and garden design. Introduction to the discipline of landscape architecture and architecture through the analysis of the built environment, concepts and themes in design; focusing on historical examples.

LDEM 209  Plant Biology 3.3; 4 cr.
An introduction to botany and the general principles of plant biology. The course material is aimed at developing an understanding and appreciation of the interaction of plants with their environment, and providing applications and insights relevant to landscape students.

LDEM 211  Landscape Horticulture I 2.3; 3 cr.
This course explores the science, the technique and the art of landscape horticulture. Students will identify plants, learn how to represent and produce them through practical sessions, and understand the theory behind successful plant management practices. They will become familiar with the landscape horticulture literature through written exercises, and will be introduced to concepts of environmental horticulture and its role in promoting nature conservation.

LDEM 212  Landscape Horticulture II 2.3; 3 cr.
Survey, identification, landscape characters, and management of herbaceous and woody landscape plants. The student will learn about the landscape uses of plants and the management requirements in different site/use situations. Prerequisite: LDEM 211.
LDEM 215  Introduction to Landscape Pests  2.3; 3 cr.
The fundamentals, biology, and ecology of landscape insects, mites, plant pathogens, and weeds.

LDEM 216  Landscape Design II  6 cr.
The process of landscape design is introduced, starting with site appreciation and analysis, through concept development and articulation using building materials, plants, and landscape furniture. The focus is on conceptual thinking and communication both verbally and graphically.  
Prerequisite: LDEM 202.

LDEM 217  Soils in the Landscape  2.3; 3 cr.
Specifically designed for landscape students, the course aims at developing an understanding of the relationship between geology, landform, soils and landscapes. The course also aims to emphasize the management actions essential in landscaping, such as soil preparation, soil amendments and fertilization.

LDEM 218  Landscape Ecology  3 cr.
Students will be introduced to the discipline of landscape ecology. The course will focus on the interplay between spatial patterns and ecological process. It focuses on detecting and characterizing social and natural patterns influence on landscapes and landscape dynamics. Implications of landscape pattern and landscape management will also be covered.

LDEM 227  Applied Plant Protection in Landscape  2.3; 3 cr.
The diagnosis of landscape pests including diseases, insects, mites, and weeds of major importance, and applied measures for their prevention and control in urban and natural environments.

LDEM 228  Ecological Landscape Design II  6 cr.
A course offered at the Agricultural Research and Educational Center (AREC) in the Beka’a. The concepts and methods introduced in the previous term are applied to rural and agricultural landscapes with a hands-on approach to landscape design.  
Prerequisite: LDEM 204.

LDEM 230  Water and the Environment  3.0; 3 cr.
Introduces physical hydrological processes and their interactions with natural environment and human activities. Topics covered include hydrologic cycle, watershed hydrology, runoff generation, precipitation, evapotranspiration, infiltration, stream processes, groundwater, erosion, and statistical hydrology.

LDEM 241  Final Year Project: Landscape Design  6 cr.
Each student will work on a project of his/her choice, with the guidance and approval of an appointed faculty committee. The natural, environmental, socio-cultural, and legal constraints, together with the specific requirements of the project, will form the basis for developing the landscape design.  
Prerequisite: LDEM 228.

LDEM 242  Final Year Project: Landscape Implementation and Management  6 cr.
Having finalized the landscape design in the previous term, the last term focuses on developing technical and implementation drawings and a management plan. Working on their individual projects, the students have the opportunity to integrate the knowledge and skills gained in the previous years into a comprehensive landscape design proposal.  
Prerequisite: LDEM 241.

LDEM 245  Irrigation Methods for Landscape Designs  3 cr.
A course that acquaints students with the design and production of economical irrigation systems that keep landscapes green while conserving water.
LDEM 246 Landscape Design III  6 cr.
This studio continues the emphasis on landscape design development with a focus on design
details, building materials and construction, landscape furniture, plant selection and their role
in articulating the landscape design. Landscape specifications, bills of quantities, and costing
are also introduced. Prerequisite: LDEM 216.

LDEM 250 Computer-Aided Design  2,3; 3 cr.
An introduction to computer-aided landscape design and analysis. Students are provided
with software tools for landscape drafting that can be applied in landscape design projects.
Prerequisite: LDEM 202.

LDEM 251 GIS  2,3; 3 cr.
The goal of this class is to explore various approaches to modeling landscape pattern and
change. The focus is on the design and use of computerized geographic information systems
for land planning and design decisions and understanding, describing, and predicting the land-
use and land-cover. The course will necessarily move between social and ecological processes
and applications of the models. Students completing the course will be able to evaluate the
trade-offs associated with use of a particular modeling approach within a given situation, and
to implement (at least minimally) several of the approaches discussed.

LDEM 260 Contemporary Issues in Landscape Architecture  3 cr.
The course Contemporary Issues in Landscape addresses recent trends in the profession to cover
the multitude of approaches, to broaden the students’ knowledge in theory, to encourage their
critical and analytical abilities, to encourage thinking in systems and to understand landscape
as a cultural expression. The course discusses works of recent interventions by Landscape
Architects in different parts of the world and sets them in relationship to their cultural, natural
and socio-economic context. At the same time students are asked to critically evaluate the
current open space situation in Beirut and discuss ideas and approaches towards the latter.

LDEM 263 Landscape Appreciation  3.0; 3 cr.
This course introduces the students to specific landscapes of Lebanon and teaches their reading
through analyzing the interrelationship between natural conditions and human settlement and
land use over time. Field trips are included in the course. Frequently.

LDEM 265 Landscape Management  2,3; 3 cr.
This course is designed to help students develop field expertise and practical skills by building on
knowledge acquired in previous science courses (plant biology, landscape horticulture and soils
in the landscape,) and learn implementation and management actions essential in landscaping.

LDEM 290 Professional Practice  3.0; 3 cr.
This course discusses the professional practice of the landscape architecture profession. It
introduces basic issues in the practice and the profession of landscape design, challenging
the students to critically examine professional, political, commercial, and other problems in
current practice. Prerequisites: ENGL 203 and junior standing.

LDEM 291 Surveying and Base Plan Development  2,3; 3 cr.
Focuses on the fundamentals of plan surveying: basic measurement of distance, angle and
elevation; use of basic surveying equipment: total station, levels and tapes, field notes; and
basic computations: traverse closure and determination of areas. It is comprised of lectures
and studio projects dealing with earthwork estimating; storm water management, site surveys,
site layout, and horizontal and vertical road alignment. Students will survey a site and transform
measurements into a base plan essential for any design process. This will include features such
as: topographic contours, spot levels, structures, vegetation, water ways and utilities.
LDEM 295  Landscape Seminar  1 cr.
Current issues in landscape design and ecosystem management.

LDEM 296  Landscape Seminar  1 cr.
Current issues in landscape design and ecosystem management.

Elective Courses for the BS Degree in Landscape Design and Eco-management

LDEM 229  Turfgrass Culture, Machinery, and Management  2.3; 3 cr.
An introduction to turfgrass use, establishment, and management. This course focuses on the environmental impact of turfgrass landscapes in arid regions. Students are introduced to the machinery used in landscape management.

LDEM 260  Current Issues in Landscape Design  3 cr.
A review of recent developments in landscape design on an international basis. The course emphasizes case studies and a critical review of the contemporary role of the profession.

LDEM 261  Spatial Structure and Movement  3 cr.
The course is concerned with the experience of outdoor and indoor spaces, and the direct influence the placement of any object has on the perception of the latter and the movement within. The course is based on the assumption that the notion of movement and body proportion for mankind has been a primary design tool throughout history, and will try to reevaluate this tool for contemporary design.

LDEM 262  Healing Gardens: Theoretical Perspectives and Applications  3 cr.
This course is offered relative to the current view that an outdoor garden at health care facility is an essential supplement to medical interventions. Introducing the concepts of healing environments in terms of medical geography and environmental psychology, the course proceeds to examine prevailing approaches to the design of healing gardens at medical settings in the present day. Theoretical perspectives from social sciences are used to interpret these healing places as well as those associated with historic precedents for healing - The Japanese garden and the landscape traditions of medieval Christianity and Islam.

LDEM 264  Interior Landscaping  2,3; 3 cr.
An introduction to the principles and practices of interior landscaping with an emphasis on plant selection and handling, environmental conditions, specifying and maintaining healthy plant materials, developing portfolios of interior landscape designs for proper installation of drainage and irrigation.

LDEM 270  Ornamental Plants for Dry Landscapes  2 cr.
A survey of native, wild, and domesticated plants adapted to dry areas with potential use in dry landscapes, with an overview of the different environmental and physiological factors that determine plant growth and developments under such dry conditions.