Landscape Architecture

Mission Statement

The mission of the program is to graduate lifelong learners and critical thinkers who adopt a holistic view of the landscape, and who are equipped with interdisciplinary, scientific, and creative skills to start as entry-level landscape architects and to become, with experience, successful professionals serving their communities.

Program Description

This is a four-year professional program which leads to a Bachelor of Landscape Architecture (BLA) and a Diploma of Ingénieur Agricole. The program integrates sciences and the arts as a foundation to design, plan and manage landscapes in natural and urban settings.

The BLA program received accreditation from the Landscape Architectural Accreditation Board (LAAB) in September 2021 for a period of six years, making it the first BLA program worldwide to be accredited by LAAB outside the USA. LAAB is the academic arm of the American Society of Landscape Architects (ASLA).

The degree requirements in Landscape Architecture (BLA) consist of the following:

- complete a minimum of 144 term credit hours (out of which 108 credit hours of mandatory core courses),
- 27 credits hours of General Education courses (Total GE requirement of 36 credit hours includes 9 credits satisfied within the Landscape Architecture core program)
- 9 credit hours of elective courses in FAFS,
- 3 credit hours of a core course in Community Engaged Learning (LDEM 263)
- achieve an overall minimum grade average of C+ GPA 2.3, and
- be approved for graduation by the faculty.

To meet the General Education requirements of AUB, BLA students must complete 27 credits of elective courses as following:

- 6 credit hours in Understanding Communication (English), including ENGL 203 and ENGL 204
- 3 credit hours in Understanding Communication (Arabic)
- 3 credit hours of an approved elective in Cultures and Histories
- 3 credit hours of an approved elective in Human Values
- 6 credit hours of approved electives in Societies and Individuals, including LDEM 262
- 3 credit hours of an approved elective in Quantitative Reasoning
- 3 credit hours of an approved elective in Understanding the World.

- Additional Thematic requirements:

One of the GE courses above has to cover the theme of History of Ideas (CHLA designation), and one course has to cover the theme of Social Inequalities.

Curriculum for the Degree of Bachelor of Landscape Architecture (BLA) and Diploma of Ingénieur Agricole

First Year

Fall term		**Credits**
LDEM 202	Studio I: Landscape Design Fundamentals	4
LDEM 200	Landscape Technical Drawing	4
LDEM 214	Landscape and Geomorphology	3
LDEM 207	Landscape Architecture History I (Cultures and Histories)	3
ENGL 203	Understanding Communication - English	3
		Total 17
Spring term		**Credits**
LDEM 216	Studio II: Landscape Garden Design	4
LDEM 201	Landscape Descriptive Drawing	4
LDEM 217	Soils in the Landscape (Understanding the World)	3
LDEM 291	Surveying and Base Plan Development	3
LDEM 211	Landscape Horticulture	3
		Total 17
Summer term		**Credits**
LDEM 252	Computer Aided Design	3
1 General Education Requirement - Cultures and Histories Elective		3
		Total 6

Second Year

Fall term		**Credits**
LDEM 222	Studio III: Landscape Planting Design	4
LDEM 210	Botany and Plant Ecology for Landscape Architects	3
LDEM 248	Site Engineering: Construction Material	3
LDEM 219	Plant Material I	2

1 General Education Requirement - Understanding the World Elective		3
		Total 15
Spring term		**Credits**
LDEM 204	Studio IV: Cultural Landscape Design	6
LDEM 208	Landscape Architecture History II (Cultures and Histories)	3
LDEM 247	Site Engineering: Earthworks, Roads and Drainage	4
LDEM 263	Landscape Appreciation and Site Analysis (Community-Engaged Learning course)	3
LDEM 221	Plant Material II	1
		Total 17
Summer term		**Credits**
LDEM 249	Site Engineering: Design Implementation	3
LDEM 231	Sustainable Water Management Techniques	3
FAFS Elective		3
		Total 9

Third Year

Fall term		**Credits**
LDEM 246	Studio V: Natural Landscape Design	6
LDEM 251	Geographic Information System (GIS)	3
LDEM 218	Landscape Ecology	3
1 General Education Requirement - Societies and Individuals Elective		3
		Total 15
Spring term		**Credits**
LDEM 228	Studio VI: Urban Landscape Design	6
LDEM 265	Landscape Management	3
1 General Education Requirement - Quantitative Reasoning Elective	Any course from the GE list, except; MATH 203 (only students coming from Humanities school background can take it); EDUC 271, EPHD 203 and NURS 203	3
LDEM 290	Professional Practice	3
		Total 15

Summer term		**Credits**
LDEM 292	Internship (Practicum)	2
		Total 2

Fourth Year

Fall term		**Credits**
LDEM 241	Studio VII: Landscape Capstone Project I	4
LDEM 260	Contemporary Issues in Landscape Architecture	3
ENGL 204	Understanding Communication - English	3
FAFS Elective		3
1 General Education Requirement - Societies and Individuals Elective		3
		Total 16
Spring term		**Credits**
LDEM 242	Studio VIII: Landscape Capstone Project II	6
ARAB	Understanding Communication - Arabic	3
FAFS Elective		3
1 General Education Requirement - Human Values Elective (Ethics course)		3
		Total 15

Course Descriptions

Mandatory Core Courses

The following design courses are part of the program requirements. There is a grade average requirement for LDEM 202, LDEM 216, LDEM 222, LDEM 204, LDEM 246, LDEM 228, LDEM 241 and LDEM 242. A student should maintain a combined average GPA of 2.3 in any two consecutive design studios within any given year during their BLA course of study. Failure to achieve this will result in the student having to repeat the design studio in which s/he received the lowest grade.

In addition to the above GPA 2.3 rule, students will be allowed to register LDEM 241 and LDEM 242 (Final Year Capstone Project I and II) only if they have successfully met studio passing requirements and passed all core courses prior to the final year.

LDEM 200 Landscape Technical Drawing 4 cr.
This is a course in descriptive geometry and graphic communication in landscape architecture. Students learn to use drawing tools. They acquire techniques of representation of 3D and space on 2D surfaces, including orthogonal (plans, sections and elevations), paraline (axonometrics and isometrics) and perspective drawings that cover construction of shades and shadows, as well as representation of open space, trees, and elements of the natural and built landscapes. Students are introduced to the basics of manual and

digital drawing techniques. The technical drawing techniques are regulated by a set of worldwide conventions used to clarify and visualize ideas and design process.

LDEM 201 Landscape Descriptive Drawing 4 cr.
The focus of the studio is to emphasize visual thinking techniques and graphical information representation. Through the use of multiple media to sketch and draw the landscape, students learn to understand their environment through developing skills in mapping information, understanding their relationships and graphically representing it.

LDEM 202 Studio I: Landscape Design Fundamentals 4 cr.
This course is the first of two fundamental design courses (the second is LDEM 216). It is a foundation for subsequent design courses. It introduces students to theories of design through readings, analysis and hands-on projects. The course is structured as a series of short exercises and is divided into two parts:

Part 1: Fundamental Elements of Landscape Design

This course is an exploration into the modes of space whish are two-dimensional surfaces, three-dimensional objects, spatial enclosure and the open continuous landscape. The emphasis is on the media of landform, water, plants and structures as defining agents of human space in the garden and the landscape at large. The form and character of the space is further determined by the context of the site and the nature of spatial geometry with studies of form, pattern, texture, tone and color.

Part 2: Basics of Design

This studio introduces students to reading and responding to the site. Goals include learning to experience and record the landscape, design in response to the site, think creatively, generate design ideas and understand design as a process, gain knowledge of design precedents and principles, and learn tools and techniques of visual expression. Students will learn through in-class exercises, reading assignments and design projects. Studio time is divided among lectures, field trips, studio design work, desk critiques, pin-ups and presentations.

LDEM 204 Studio IV: Cultural Landscape Design 6 cr.

Part 1: Cultural Landscapes

The cultural landscape studio introduces students to the process of research, planning, design, and management of historically and culturally significant landscapes through selected real-world site projects. Part one introduces methods of assessment, approaches and policies (local and international), case studies of similar projects as well as historical analysis of the study area.

Part 2: Historic Preservation and Design

The course explores landscape design proposals for sites within historically significant areas. Emphasis is on methods of analysis and design development. Graphic and photographic documentation of existing built forms serve as the basis for design proposals. Students engage in the following five steps in the process of their study: 1) Students investigate a landscape's site history using primary and secondary resources. 2) They analyze, document and evaluate existing conditions. 3) They interpret the significance of the natural, historic and cultural importance of the landscape site. 4) They recommend appropriate treatment strategies. 5) Finally, they present the findings of this research process. Prerequisite: LDEM 222.

LDEM 207 Landscape Architecture History I 3 cr.
This course aims to explore significant transformation in landscape architecture history and present a range of information to enable the development of alternative, diverse and nuanced communication tools for issues of the landscape. A series of lectures combined with literature study and a visual and textual project analysis aims to guide students to be able to analyze, evaluate and understand historic landscapes in contemporary society. (Students who receive credits for LDEM 207 cannot receive credits for LDEM 107. Fall only)

LDEM 208 Landscape Architecture History II 3 cr.
The course aims to explore the development of designed landscapes and manifestations of landscape architecture from the 18th century to the present. By investigating the complex relationships between people and their environments, it will shed light on the shaping of outdoor space and the evolution of human settlements within built and natural settings. The course will provide a critical and historical understanding of landscape architecture as ideology, experience, spatial form and profession. It will focus on pioneers within the field and on historical examples of gardens, parks, community spaces and environmental planning strategies, which explain landscape designs as products of cultural, political, social and environmental influences. Prerequisite for LDEM students only: LDEM 207. (Students who receive credits for LDEM 208 cannot receive credit for LDEM 108. Spring only).

LDEM 210 Botany and Plant Ecology for Landscape Architects 3 cr.
This course tackles key concepts, principles and current issues in botany, plant ecology and plant conservation and discusses their application to the Middle East region and to landscape architecture. The course is structured to include peer teaching, debates, and discussion of articles and case studies. Upon completion of the course, students will have solid knowledge and a reference base to readily integrate natural and human made vegetation into their designs.

LDEM 211 Landscape Horticulture 2.3; 3 cr.
This course covers basic principles of selection and management of landscape plants. Students will learn how to select plants appropriate to site and purpose, and will be introduced to concepts and applications of environmental horticulture and its contribution to the well-being of humans and nature. The course relies on hands-on field projects, site visits, essays and photo-documentation.

LDEM 214 Landscape and Geomorphology 3 cr.
This course provides crucial insights on how landforms and hence landscapes develop in space and time. It introduces students to the geomorphological underpinnings of landscape formation and trains them to read the natural and anthropogeomorphic aspects of landscapes.

LDEM 216 Studio II: Landscape Garden Design 4 cr.
This course is the second of two design introductory courses. It is a foundation for subsequent courses that explore project design in varied contexts and scales. It introduces students to theory and practice of landscape design and site planning by doing, observing, reading and reflecting. Students apply knowledge acquired from LDEM 202 on real site contexts with an emphasis on site design. Focus is on two dominant landscape design types: the park (public) and the garden (private). Students will analyze case studies and relevant readings pertaining to both landscape typologies. Prerequisite: LDEM 202.

Part 1: The Park

The focus is on the application of spatial theory and design process to a specific site

context. Work will develop map-reading skills at various scales and strengthen drawing, lettering and cross-section representation skills. The emphasis is on landform design in a public park setting (urban and non-urban).

Part 2: The Garden

The garden is a personal, direct and intimate expression of landscape architecture. It is explored here as a contemporary art primarily through the design of individual sites and, secondarily, through guided research and discussion sessions which explore important works and design theory in the genre. The emphasis is on developing an informed and creative personal approach that inspires while solving practical problems on real sites. The focus here is on residential gardens or gardens pertaining to institutions.

LDEM 217 Soils in the Landscape 2.3; 3 cr.
This course will examine soils as integral components of the landscape and as a medium for landscaping activities. It is designed to help students 1) acquire a good understanding of the relationship between geology, landform, soil, vegetation and landscape, and 2) implement management actions essential in landscaping, such as soil preparation, soil amendment and fertilization. Emphasis will be placed on soils as a component of Mediterranean ecosystems and land mosaics with special focus on soil resources in Lebanon. Labs and field trips will be organized in order to observe and analyze soils in the environment, and to manipulate soil substrates for optimizing plant growth. Prerequisite for LDEM students only: LDEM 214.

LDEM 218 Landscape Ecology 3 cr.
Students will be introduced to the discipline of landscape ecology. The course will focus on the interplay between landscape patterns and ecological processes at large (landscape scale). It also focuses on detecting and characterizing social and natural patterns of influence on landscapes and landscape dynamics. Implications of landscape pattern and landscape management will also be covered. Case studies will be selected from different Mediterranean environments where the co-evolution of human communities with the natural settings have permanently shaped and modified landscape structures and ecosystem functions. The course will also explore applications in relevance to landscape architecture and planning. Prerequisites: LDEM 210 and LDEM 217.

LDEM 219 Plant Material I 1.3; 2cr.
This course will introduce students to the botanical and horticultural dimension of designed landscapes by focusing on the species and cultivars that have a landscape interest. In the process of learning about landscape plants, students will be introduced to the taxonomic, horticultural, ornamental and landscape aspects of approximately 300 plants during the sessions. Emphasis is placed on major categories of herbaceous plants and woody plants used in landscape including trees, shrubs, vines, flowering plants, ornamentals and hedge plants commonly utilized in this region by a combination of experiential activities, discussions, online resources and homework assignments. Students will also learn the proper selection and usage of these plants in landscape situations, plant assets and liabilities, alternative plants for various situations and cultural aspects.

LDEM 221 Plant Material II 0.3; 1 cr.
This course will introduce students to the botanical and horticultural dimension of designed landscapes by focusing on the species and cultivars that are used in edible and medicinal native and urban gardens. In the process of learning about landscape plants, students will be introduced to the taxonomic, horticultural, ornamental and landscape aspects of approximately 150 plants during the sessions. Emphasis is placed on major categories of

herbaceous plants, as well as on woody ornamentals, fruit trees and native plants used in the landscape including trees, shrubs and vines. Students will also learn the proper selection and usage of these plants in landscape situations, plant assets and liabilities, alternative plants for various situations and cultural aspects.

LDEM 222 Studio III: Landscape Planting Design 4 cr.
The course introduces students to the basic principles of designing with plants. Landscape Architecture combines elements of art and science to create a functional, aesthetic and spatial experience of the outdoor space. One initial purpose of designing with plants is to understand how to blend technology (the built environment) into the natural surroundings and to bring natural elements into the built environment. In order to work toward a desirable landscape design and hence successful planting plan, students will develop working knowledge of artistic elements, design principles and basic horticultural knowledge of plants. Successful plant composition and layout is obtained with acknowledgement of the importance of plants as a design material that enhances the definition and spatial experience of outdoor spaces. Prerequisites: LDEM 216, LDEM 211 and LDEM 219.

LDEM 228 Studio VI: Urban Landscape Design 6 cr.
The focus of this studio is site design in the urban context. As such, it will enable students to explore the particular challenges of designing in complex urban environments. By their nature, urban environments have multiple layers and meanings and are influenced by an array of forces. Urban landscapes are an amalgam of myriad social, cultural, political, economic and ecological processes on physical space. Designing in the urban context therefore requires sensitivity to these many layers and influences. Creative response to the challenges of urban environments requires careful attention to the landscape narratives students choose to tell, and how users of a space learn and discover new things from a site. Prerequisites: LDEM 246.

Part 1: Understanding and Analyzing Urban Landscape Systems

The purpose here is to briefly overview basic concepts of urbanism (transportation, infrastructure, zoning laws, real estate markets, economic development, social issues and so on) with strong emphasis on understanding urban open spaces and networks through readings. Students will analyze case studies of similar contexts and analyze urban landscape systems pertaining to the study area.

Part 2: Study Area

An application of urban design theories to various scales of urban design, with special focus on civic scale design elements and spatial and functional requirements. The end goal is to design a landscape system or site with an urban context.

LDEM 231 Sustainable Water Management Techniques 3 cr.
The course will focus on water as a scarce resource in Lebanon and the region. Students will be exposed to theoretical and practical aspects of sustainable water resources management as related to landscape design, namely in the areas of demand efficient water use and management. Students will learn about efficient indigenous and exotic landscape irrigation, surface and subsurface drainage design, rainwater harvesting and water conservation. Offered in the summer term only.

LDEM 241 Studio VII: Landscape Capstone Project I 4 cr.
This course is intended to assist students in selecting an individual capstone project, finding and organizing appropriate information needed for the project, and establishing

parameters and questions for the design and development of the project. The studio focuses on an approved design problem requiring individual work, which will serve as a comprehensive examination. Preparation and presentation include a written and graphic problem statement, analysis and detailed plans or other approaches approved by the instructor. Prerequisites: LDEM 228 and LDEM 246.

LDEM 242 Studio VIII: Landscape Capstone Project II 6 cr.
This course includes the Final Year Project (FYP), conducted with a faculty advisor, and includes collection, analysis and interpretation of project information. The final studio covers a variety of projects that may include landscape design projects involving fine arts, urban design and town planning. Students are expected to achieve a comprehensive understanding of ideas, processes and concepts. This is the capstone project where students demonstrate their acquired design skills and knowledge. They are expected to develop their design, produce presentation drawings and defend their ideas orally at a professional level. Students are assessed by department faculty. Note: This course fulfills the capstone writing intensive requirement for the Landscape Architecture major. Prerequisite: LDEM 241.

LDEM 246 Studio V: Natural Landscape Design 6 cr.
This course examines the relationship between ecological landscape design and natural elements/resources. The emphasis is on understanding natural and human/cultural systems and the interactions across. Of primary importance is understanding of ecological processes that occur within. Students will learn the significance of these systems and their potential contribution to sustainable environments while highlighting the threats and opportunities from anthropogenic impacts. As a design studio, students will explore landscape planning and design from the regional to the site-development scale and they will learn how to integrate ecological design and planning frameworks within their design proposals to balance human use and ecological integrity. This will require the ability to synthesize information about natural features, cultural resources, and development patterns to create spatial landscape strategies that address the unique problems and opportunities of a chosen study area. Prerequisites: LDEM 204.

LDEM 247 Site Engineering: Earthworks, Roads and Drainage 4 cr.
This is the second of the three courses in the LDEM Site Engineering sequence. This course focuses on the study of techniques essential to the horizontal and vertical development of site designs; emphasis on grading, cut and fill calculation, storm-water drainage and management, erosion control, road alignments and earthwork. This is a lecture course with intensive exercises for engineering calculation and drawing techniques. Prerequisite: LDEM 248.

LDEM 248 Site Engineering - Construction Material 3cr.
This is the first of the three courses in the LDEM Site Engineering sequence. This course will serve as a capstone to landscape architectural construction with emphasis on understanding and preparing complete sets of construction documents for landscape architecture projects. It includes methods and procedures necessary for transforming a design idea into a set of construction drawings that is accurate, precise and clearly understood; and the principles, processes and techniques of site engineering for the “hard” and “soft” elements of landscape architecture and surfaces, including wood construction, free-standing and retaining walls, pavement, steps, decks, lighting and planting irrigation. Students will also implement their designs through hands-on experience.

LDEM 249 Site Engineering - Design Implementation 2.5; 3cr.
This is the third and last of the three courses in the LDEM Site Engineering sequence. This course includes presentation and classification of landscape construction and materials: in particular, material types and measurement standards of construction elements. Floor elements, such as paving materials, pedestrian ways, stairs and ramps, are emphasized. Border and enclosure elements, such as walls and fences, are studied. Shelter elements, such as pergolas and gazebos, are explored. Water elements, such as ponds, waterfalls, pools and fountains, are studied. Outdoor space, furniture and ornaments, such as benches, litterbins, lighting elements, pedestrian bridges and decks, are focused upon. Interactions between materials, buildings, spaces and humans will be explored. Research studies and case studies will be conducted for designing original landscape construction and material. This studio course will focus on lectures, exercises and projects dealing with landscape equipment, and design methods. In addition, students have exposure to measuring quantities and defining specifications. Prerequisites: LDEM 247 and LDEM 248. Offered in the Summer term only.

LDEM 251 Geographic Information System (GIS) 2.3; 3 cr.
This course acquaints students with classical and modern methods of landscape analyses as well as assessment and changes in landscape structure using ArcGIS and its extensions. Students will be gradually introduced to the subject both to acquire and integrate geographic data, and to learn how to analyze and interpret the results. All topics are demonstrated on selected tasks. The goal of this course 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 on understanding, describing and predicting land-use and land-cover. The course will move between social and ecological processes and applications of the models. Students will learn 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 252 Computer Aided Design 4.5; 3cr.
This is an introductory course that covers Computer Aided Design digital drawings to develop skills for landscape architects to communicate, create and implement. The course includes lectures and computer labs focused on learning the basic commands for drawing in two dimensions including: absolute and relative coordinates; working in layers, paper and model space; manipulation of text and plotting. The focus is on understanding the software environment and basic applications of AutoCAD and on using relevant tools of this graphic design software to develop high quality landscape design graphic outputs, such as diagrams, perspectives, sections, plans and 3D models. These skills will enable students to employ computer graphic design tools in landscape architecture studios throughout the rest of their degree courses. Offered in the Summer term only.

LDEM 260 Contemporary Issues in Landscape Architecture 3 cr.
This course addresses recent trends in landscape architecture that cover the multitude of approaches, in order to broaden the students' theoretical knowledge, encourage their critical and analytical abilities, and sharpen their understanding of systems and the landscape as a cultural expression. The course discusses recent interventions by landscape architects in different parts of the world and assesses them in relation to their natural, cultural and socioeconomic contexts. At the same time, students are asked to critically evaluate the current open space situation in Beirut and discuss ideas and approaches related to it. Prerequisites (for LDEM students only): LDEM 207 and LDEM 208.

LDEM 263 Landscape Appreciation and Site Analysis 3 cr.
This course introduces students to specific landscapes of Lebanon and teaches them how to read spaces by analyzing the interrelationship between natural conditions, human settlement and land use over time. The course is based on an integrated view of the landscape, taking into consideration both natural and cultural components. Students will be exposed to different approaches to perceiving, reading and interpreting the landscape. Prerequisite: LDEM 291.

LDEM 265 Landscape Management 3 cr.
This course is designed to help students acquire the necessary knowledge to produce landscape management manuals. Students will also have the opportunity to learn about the various aspects and issues related to landscape management by reading and discussing peer-reviewed articles related to the field or observing the management of actual projects. Prerequisites: LDEM 211, LDEM 217 and LDEM 231.

LDEM 290 Professional Practice 3 cr.
The course discusses the professional practice of landscape architecture. It is structured to give students an overview of the professional opportunities, roles and responsibilities within which graduates of the program will most likely practice their trade. The course will be structured as a series of lectures, workshops, discussions and presentations from practicing landscape architects, engineers and other professionals who will expose students to different aspects of the trade. It introduces basic issues in the practice and profession of landscape architecture, challenging the student to critically examine professional, ethical, economic, political, social and other issues in the current practice. It covers the different typologies of landscape projects, firms and clients, and introduces the full cycle of a landscape project from award and conception to construction and site supervision.

LDEM 291 Surveying and Base Plan Development 2.3; 3 cr.
The course focuses on the fundamentals of plane surveying: basic measurement of distance, angles and elevations. It also focuses on the use of basic surveying equipment, such as total stations, levels and tapes, theodolites field notes; and basic computations, such as 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, collect and analyze data 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 292 Internship (Practicum) 2 cr.
The objective of the landscape architecture internship is to offer students the opportunity to broaden their educational experiences by actively participating in a professional landscape architecture, planning and/or engineering office environment. The intention is to provide an opportunity for exploring the world of landscape architectural practice through professional and reflective activities that address educational goals and objectives. Prerequisites: LDEM III standing and LDEM 290. Offered in the summer term only.

Elective Courses

LDEM 107 Landscape Architecture History I 3 cr.
The purpose of this course is to investigate the history of landscape architecture and understand the process of creating it. The course outlines the principles of landscape history in relation to the history of art, nature, technology and culture in general and tries to interpret

their scientific and artistic meaning within the current debate on the goals of landscape architecture among the other design disciplines. (Students who receive credits for LDEM 107 cannot receive credits for LDEM 207. Freshman-level. Fall only).

LDEM 108 Landscape Architecture History II 3 cr.
The course explores the development of designed landscapes and manifestations of landscape architecture from the 18th century to the present. It will focus on pioneers within the field and on historical examples of gardens, parks, community spaces and environmental planning strategies, which explain landscape designs as products of cultural, political, social and environmental influences. (Students who receive credits for LDEM 108 cannot receive credits for LDEM 208. Freshman-level. Spring only).

LDEM 203/ENSC 202/ARCH 060L The Environment and Sustainable Development 3 cr.
This course is an introduction to sustainable development which include concepts, goals, and economic and social aspects. Also, environmental issues associated with development that involve natural resource management, population, food production and energy, are emphasized. The institutional framework, standards and policies, emerging technological applications and their impacts, resolution of environmental conflicts, and future trends will be explored.

LDEM 230 Water and the Environment 3 cr.
This is an introductory course addressing the interactions between water and the natural environment, and the role of human activities in these interactions. This course covers a broad range of topics, including climate change, the hydrologic cycle, watershed hydrology, runoff generation, groundwater, point and nonpoint sources of pollution, best management practices and a multitude of water quality issues. Local, regional and international case studies will be covered to foster a better understanding of water quality and quantity concepts, applications and principles. (Open to all students except LDEM students).

LDEM 254/ARCH 061L Regional and Community Studies 1.3; 3 cr.
The department will identify a community-driven project in which local and possible international students will participate. The target community will be selected at least 6 months prior to the start of the summer term. The selection process will depend on input from outreach activities performed by the department and by other academic units with which the department coordinates closely, such as NCC and CCECS. This course focuses on applied knowledge and is thus taught by doing, as in by creating a design that is ready to be applied as well as a full proposal. Landscape designed elements are thus site/context dependent; therefore, applied ecology and cultural landscape history are important to concept development. Students enrolled in the course will work fourteen days on site with community partners and stay with local families during that period, and spend 1 week on campus working on the design and proposal. Working together in groups, students will create a practical design. Using a combination of lectures, discussions, interactions with nature, hands-on projects and community immersion, students will analyze the local environment and design holistic systems that meet the needs of people while respecting the needs of nature.

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 on 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 Nature: Theoretical Perspectives and Applications 3 cr.
This course investigates the relationship between people and nature and seeks to deepen students' sense of connection with the natural world. There is a large body of literature that sheds light on the beneficial effects of nature. Students will learn about theories that explain how nature, outdoor green spaces and gardening have a positive impact on our lives and well-being. They will be introduced to current research findings and be trained in reading and comprehending peer reviewed articles related to this field. Students will learn basic research methods and use these to implement class projects to gain first-hand experience of people's response to nature.

LDEM 264 Interior Landscaping 2.3; 3 cr.
This course is 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 planting designs and details for proper installation of drainage and irrigation, and fixed or movable containers. The course also includes design compositions of planned interior landscapes in a creative and aesthetic environment and the availability of plant material on the market. Prerequisite for LDEM students only: LDEM 211 or equivalent.

LDEM 266 Introduction to Edible Landscapes 3 cr.
This course introduces students to the principles of edible landscaping and offers an overview of the history and significance of the topic in our region. Edible landscapes incorporate fruit trees, vegetable plants, as well as wild edible plants in a way that is both productive and aesthetically interesting. The course will shed light on the history and the evolution of human settlements in relation to edible and food growing landscapes within built and natural settings.

LDEM 267 Introduction to Restoration Ecology 3 cr.
This course introduces various practical tools required for the recovery of various degraded, damaged, or destroyed ecosystems with an emphasis on urban ecosystems.

LDEM 268 Introduction to Permaculture Design 3 cr.
Permaculture is an ethically-based design approach which aims to create sustainable human communities through ecological and regenerative design. This course covers the theory and basic principles of permaculture. Students will develop a good knowledge about the permaculture ethics and principles, their applications and how these can be integrated both at urban and at rural surroundings.

LDEM 270 Ornamental Plants for Dry Landscapes 3 cr.
This course is 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 development under such dry conditions. Prerequisite for LDEM students only: LDEM 210 and LDEM 211 or equivalent.

LDEM 271/ARCH 073/CIVE 686/ MECH 681 Environmentally responsive buildings 3 cr.
This course enhances knowledge pertaining to design aspects and application possibilities of climate responsive and environmentally friendly buildings. The impact of using construction building materials throughout the lifecycle of projects will also be discussed. At the end of the course, students will be equipped with the necessary knowledge that will enable them to make informed decisions regarding green projects in their careers. Prerequisite for LDEM students: LDEM III or LDEM IV or graduate standing and consent of instructor.

LDEM 272 Landscape Architecture: Gender, Women and Inclusion 3 cr.
The course places the concept of inclusion and gender at the center of explorations of landscape architecture. It investigates the complex relationships between people and their environments, and the ways in which people read, experience, define and create landscapes. It places an emphasis on the role of women in particular, and the way in which women have shaped, and have been shaped by, their physical environments. It looks at women as users, as thinkers and community leaders, as well as designers, and highlights their overall influence on landscape theory and practice from these different perspectives.

LDEM 298 Special Topics in Landscape Architecture: Project/Workshop 1; 2 or 3 cr.
The project/workshop course provides opportunities for students to participate in hands-on experiences, gain new skills and be exposed to real projects. Students will work on issues and applications that are not included in regular courses. General prerequisites will be identified whenever the project/workshop course is offered. The topic, format, and prerequisites will vary; therefore, it might be repeated for credits.

LDEM 299 Special Topics in Landscape Architecture: Tutorial 1; 2 or 3 cr.
The tutorial provides opportunities for students to pursue directed study readings and preliminary research relevant to their concentration when existing courses do not offer the required subject matter. It covers special topics developed under the direction of a faculty member on a tutorial basis. The topic, format, and prerequisites will vary; therefore, it might be repeated for credits.