ARCHITECTURE

Master of Urban Design and Digital Environments (MUDDE) Program

Program Mission

The mission of the MUDDE program is to prepare students to solve complex and multi-faceted urban problems using the best practices and the latest technologies. The program looks to create high-caliber design professionals who are also critical thinkers, capable researchers, advocates of social justice and life-long learners**.**

Program Goals

- Thoroughly understand the multifaceted nature of the urban environment
- Are equipped with the latest knowledge, skills, technologies, and best-practices relevant to both the local and international contexts
- Are critical thinkers, and can develop creative solutions to complex urban problems
- Contribute to the wider society by becoming an important generator of scholarly activity in the areas of urbanism and design
- Can advance their careers through the knowledge, professionalism, and work ethic gained in the program

MUDDE Course Sequencing

	Fall	Spring
Year I	UDDE 601 UDDE 602 UDDE 603	UDDE 604 UDDE 605 UDDE 608
Year II	UDDE 606 UDDE 610	UDDE Elective UDDE 614

MUDDE Summary of Degree Requirements

Course Classification	Credit Hours Required
Core	27
UDDE Electives	3
Total	**30**

MUDDE Core		Credit Hours
UDDE 601	Urban Design Studio I	3
UDDE 602	History and Theory of Urban Design and Urbanism	3
UDDE 603	Digital Techniques for Urban Design	3
UDDE 604	Urban Design Studio II	3
UDDE 605	Sustainable Infrastructure	3
UDDE 606	Urban Design Studio III	3
UDDE 608	Geographic Information Systems	3
UDDE 610	Thesis Research	3
UDDE 614	Thesis Studio	3

Total Core Requirements	27

MUDDE Electives		Credit Hours
UDDE 607	Urban Research Lab	3
UDDE 609	Parametric Urban Design	3
UDDE 611	Emerging and Critical Urbanism	3
UDDE 612	Masters Internship	3
Total Electives Requirement		3

CORE COURSES

UDDE 601 | URBAN DESIGN STUDIO I (0-6-3)
F, and upon demand
Theme: Existing Urban Fabric

This is the first studio course in the MUDDE program: Students will work within an existing urban area and conduct extensive urban analysis. The aim is to develop an urban infill project - i.e., an intervention of a smaller scale aimed to improve an existing area. Students will conduct urban research and interact with stakeholders as a requirement. Ultimately, they are to develop a creative, culturally relevant design that addresses site and stakeholder needs according to best practices and while using the latest technologies.

UDDE 602 | HISTORY AND THEORY OF URBAN DESIGN AND URBANISM (3-0-3)
F, and upon demand
In this course, historical plans, movements, influences, and thinkers shaping contemporary city planning and urban design will be examined. Students will engage in critical debates relevant to these historical precedents and milestones. The course will also cover areas of planning and design theory through further readings. The assignments will be built around several research papers, in addition to some creative visual work.

UDDE 603 | DIGITAL TECHNIQUES FOR URBAN DESIGN (1-2-3)
F, and upon demand
This course advances students' skills in Building Information Modelling (BIM) with a focus on site design. Also, other software packages relevant to master-planning efforts and urban design experimentation will be introduced. The course puts students on the path for Autodesk Certification. The digital techniques used here will aid the students in future studios and course work, and subsequently in their professional careers due to the collaboration enabling environment of BIM.

UDDE 604 | URBAN DESIGN STUDIO II (0-6-3)
Prerequisite: UDDE 601 | S, and upon demand
Theme: The New Neighborhood

In this second urban design studio, students are expected to develop a masterplan for a new area. The students will be assigned a predetermined site with some inherent restraints including environmental, social and economic elements. They are then to develop a complete masterplan for the area following best practices while conducting significant urban analysis and research, involving stakeholders, and by following local urban design and planning regulations. The use of digital design methods is a requirement in this studio and all subsequent studios.

UDDE 605 | SUSTAINABLE INFRASTRUCTURE (1-2-3)
S, and upon demand

Contemporary large cities (including Dubai) are suffering from the negative impacts of ailing and underperforming infrastructure and congested transport networks. This course introduces the students to basics of transport and infrastructure system through a series of readings, guest speakers, and digital simulations. Students conduct research and experiment with some cutting-edge approaches to dealing with transport and infrastructure, including altering urban forms. The expected outcome of this course is a research paper that could also be expanded with collaboration with faculty members into a more significant research effort and publications.

UDDE 606 | URBAN DESIGN STUDIO III (0-6-3)
Prerequisite: UDDE 604 | F, and upon demand
Theme: Future Urban Environments

This is the third and final urban design studio before the thesis studio. In this highly conceptual course, students will work on developing forward-thinking/ conceptual designs for urban environments while incorporating the latest innovations in mobility, urban infrastructure, and structure. The resulting individual projects should reflect significant creativity and the mastery of urban design skills. The final work will be shared with wider audiences and could be the seed for the gradation project topic in the subsequent semester and further research.

UDDE 608 | GEOGRAPHIC INFORMATION SYSTEMS (GIS) (1-2-3)
S, and upon demand

The importance of GIS for the areas of city planning, information sharing, scenario building, and urban visualization cannot be ignored. This course will take students through the full spectrum of GIS use, starting from the basic concepts of GIS, to advanced modeling and prediction of urban growth patterns. The course would specifically appeal to those students interested or employed in public sector jobs due to the wide use of GIS in the municipalities and by regulatory authorities.

UDDE 610 | THESIS RESEARCH (3-0-3)
Prerequisite: Completion of 15 credits | F, and upon demand

In this thesis course, students will be introduced to research methodology and proper approaches for urban research. Students will then develop their individual research topics, research questions, case studies, in addition to an extensive review of literature and precedents. Any tools needed for fieldwork will be developed during the course, and the necessary fieldwork will be conducted. The final course deliverable will be in the form of a short book representing the foundation for the design project in UDDE 612. Some of the research conducted could be later converted into publications with the collaboration of faculty members.

UDDE 614 | THESIS STUDIO (0-6-3)
Prerequisite: UDDE 610 | S, and upon demand

This is the final design project in the program and the last milestone prior to obtaining the master's degree. Based on the research conducted in UDDE 610, and as the culmination of skills and knowledge throughout the program, the students will develop an extensive digital-design solution for the problem or urban challenge identified and researched earlier. The final project submission will be in a graphical format and will be widely shared and advertised especially among consultancies and professionals in the field.

ELECTIVE COURSES

UDDE 607 | URBAN RESEARCH LAB (1-2-3)
S, and upon demand

In this course, the faculty member proposes some areas of ongoing research or further investigation and interested students could join the course to be part of the research team. The work could be based in the lab or in the field, or even abroad as part of a research and study tour. The ideal final output for this course would be a research paper presented at a local or international conference or a journal publication.

UDDE 609 | PARAMETRIC URBAN DESIGN (1-2-3)
S, and upon demand

This course advances the digital focus of the MUDDE program. The course content relates to creating future urban environments and scenarios through advanced digital manipulations based on parametric design principles. The course will use the software (Rhino) and will expand in custom programming using grasshopper and other relevant plugins and extensions.

UDDE 611 | EMERGING AND CRITICAL URBANISM (3-0-3)
Prerequisite: UDDE 606 | S, and upon demand

In this advanced elective course, the students are introduced to the latest emerging and/or critical themes in the areas of urbanism and urban/digital design. The course will be based around extensive readings, videos, and discussions, including input from guest speakers in the public and private sectors. The students will produce a number of small research papers and visual compositions to reflect the different course topics.

UDDE 612 | MASTERS INTERNSHIP (3-0-3)
S, and upon demand

Professional experience is essential for all those in the design field, and especially at the Master's level. Joining a design firm or a public sector agency as an intern is a rewarding experience that not only supplements the students with real-life experiences but also helps establish connections with the industry and future employers. Though this course is an elective, it is advised that all students in the MUDDE program complete a professional internship.