

Program Viewbook

Master of Science in Design Innovation for Circular Economy (MScDICE)

Program Description

The Master of Science in Design Innovation for Circular Economy (MScDICE) equips students with the knowledge and skills to lead sustainability transitions through design-driven strategies. Rooted in systems thinking, policy innovation, and circular economy principles, the program empowers graduates to tackle complex environmental and social challenges by developing regenerative solutions across products, services, buildings, and urban systems. Through interdisciplinary coursework and project-based learning, students explore the intersections of design, business, technology, and governance—preparing for impactful careers in sustainability consulting, innovation strategy, policy development, and circular design leadership.

The MScDICE program will equipped the graduate for the roles such as Lead Designer, Circular Economy Consultant, Sustainability Innovation Manager, Design Strategist, Urban Sustainability Advisor, Policy Analyst/Advisor, Environmental Impact Analyst/Lifecycle Analyst, Innovation Lab Coordinator/Research Fellow, Sustainable Product Manager, Corporate Social Responsibility (CSR) Lead, Green Entrepreneurship /Start-up Founder, Design Researcher/Systems Designer, Materials Innovation Specialist, and Sustainable Supply Chain Analyst.

Program Learning Outcomes (PLOs)

- PLO 1: Demonstrate an in-depth understanding of Climate Crisis as a human-led threat to our planet and a design by-product.
- PLO 2: Discuss Design as a human values-driven activity that significantly impacts our lives and the natural world.
- PLO 3: Appraise how transitioning from linear consumption patterns to circular ones through the Circular Economy can mitigate the Climate Crisis.
- PLO 4: Apply circular economy principles and methods to developing diverse design strategies for business and entrepreneurship, upholding the ecosystem's balance and promoting a sustainable, equitable, and resilient future.
- PLO 5: Implement innovative pathways, processes, methods, and data use to design environments, activities, and products that consider the directives of the Circular Economy and the threads of the Climate Crisis.
- PLO 6: Apply cutting-edge computational tools and methods to mine, analyze, and manage complex data, to implement Circular Economy principles in designing environments, activities, and products.
- PLO 7: Integrate critical and speculative design thinking to forge innovative projects rooted in the Circular Economy.
- PLO 8: Recognize as part of the professional ethos the concern of living in harmony with nature as a condition of humanity's survival and prosperity.
- PLO 9: Collaborate effectively in multidisciplinary teams to enrich insights and design strategies for the circular economy.

Program Completion Requirements

The MScDICE degree shall be awarded to a student upon fulfillment of the following requirements:

- Successful completion of 33 credit hours.
- Achievement of a minimum cumulative GPA of 3.0 on a 4.0 scale.
- Completion of at least 75% of the total program credit hours at CUD.
- Completion of Applied Research Project at CUD.

Program Structure

Core Courses	21 Cr. Hrs.
Electives	06 Cr. Hrs.
Applied Research project	06 Cr. Hrs.
Total	33 Cr. Hrs.

List of Courses

I. Core Courses				
Course			Prerequisite	Cr. Hrs.
				21
DCE	611	Design-Out Climate	None	3
DCE	612	Fundamentals of a Circular Economy	None	3
DCE	613	Design Futures	None	3
DCE	614	Research by Design	None	3
DCE	621	Lifecycle Assessment and Circular Metrics	DCE 611	3
DCE	622	Regenerative Buildings and Cities	DCE 612, DCE 614	3
DCE	623	Sustainable Design Policy and Governance	DCE 612, DCE 613	3

II. Elective Courses				
Course			Prerequisite	Cr. Hrs.
Elective Courses (06 Credits): Students are required to select two courses from the following courses				06
DCE	624	Design Industry Revolution	DCE 613	3
DCE	625	Applied Environmental Science	DCE 611	3
DCE	626	Impacts of Climate Change Policy on Environmental Management	DCE 611, DCE 612	3
DCE	627	Technical and Scientific Methodologies in Circular Economy	DCE 612, DCE 614	3
DCE	628	Smart Technologies and AI for Circular Economy	DCE 612, DCE 614	3

III. Practical Experience & Projects				
Course			Prerequisite	Cr. Hrs.
DEC	630	Applied Research Project	Completed 24 Cr. Hrs.	6

Three Semesters Study Plan

Semester	Course Code		Subject Title	Prerequisite	Cr. Hrs.
1	DCE	611	Design-Out Climate	None	3
	DCE	612	Fundamentals of a Circular Economy	None	3
	DCE	613	Design Futures	None	3
	DCE	614	Research by Design	None	3
	Total Semester Credit Hours				12
2	DCE	621	Lifecycle Assessment and Circular Metrics	DCE 611	3
	DCE	622	Regenerative Buildings and Cities	DCE 612, DCE 614	3
	DCE	623	Sustainable Design Policy and Governance	DCE 612, DCE 613	3
	DCE	xxx	Elective I		3
	Total Semester Credit Hours				12
3	DCE	xxx	Elective II		3
	DCE	630	Applied Research Project	Completion of 24 Cr. Hrs.	6
	Total Semester Credit Hours				9
Total Credit Hours					33