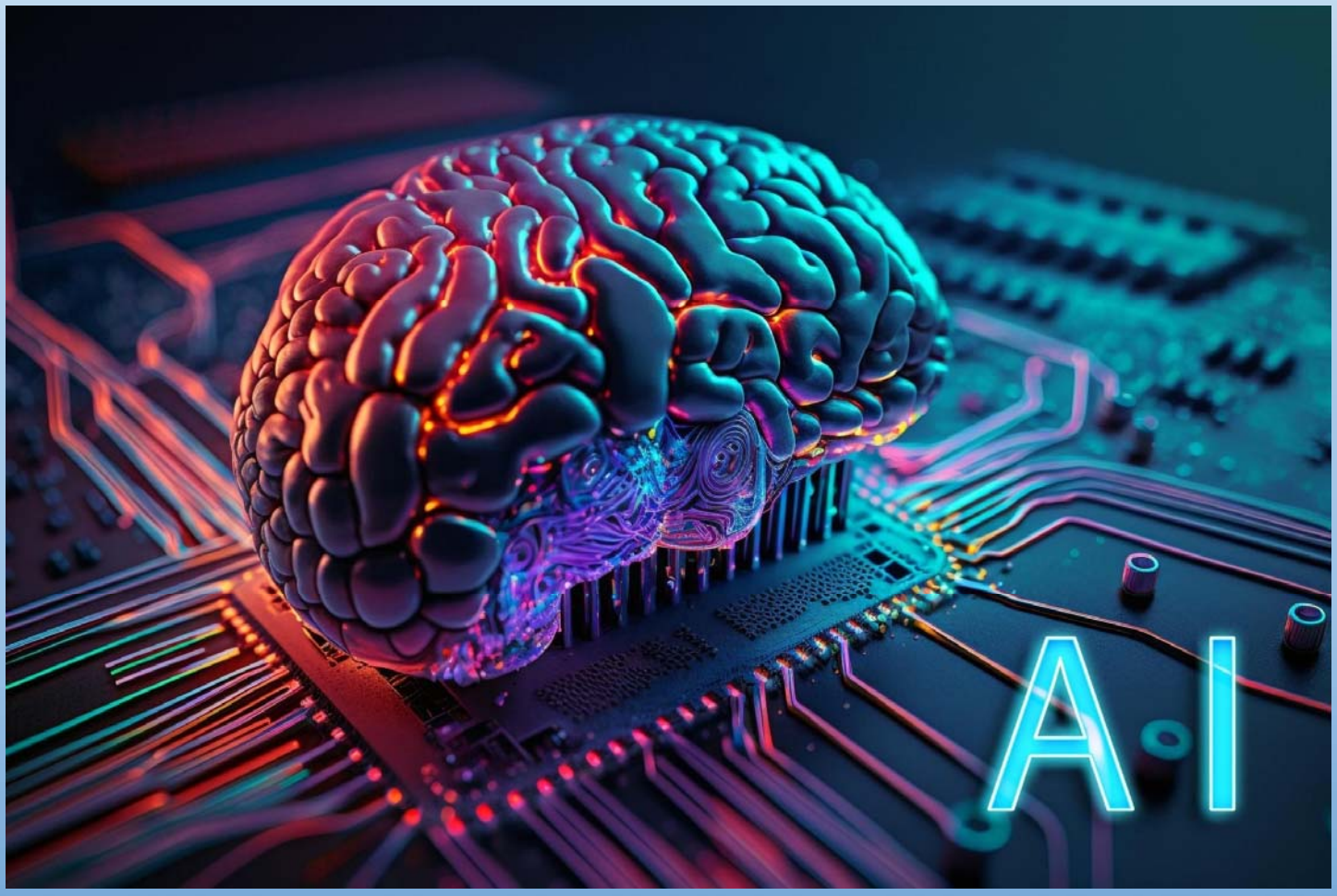
SHARDA UNIVERSITY
Beyond Boundaries

NAAC A+ ACCREDITED

SHARDA SCHOOL OF DESIGN, ARCHITECTURE AND PLANNING



AI Application in Architecture & Design

NV41002

VALUE ADDED COURSE
BROCHURE 2025-26

ABOUT THE UNIVERSITY

Sharda University is a leading NAAC A+ educational institution based out of Greater Noida, Delhi NCR. A Venture of the well-known Sharda Group of Institutions (SGI). The university has established itself as a high-quality education provider with major focus on holistic learning and imbibing competitive abilities in students.

ABOUT SCHOOL

Sharda School of Design, Architecture & Planning (SSDAP) prepares the students for the real world they can make a lasting impact in designing the future and have an exciting and rewarding career. The students at SSDAP have crafted the world as renowned landscape architects, urban planners, urban designers, and history preservationists.
The school's nationally accredited degree programs, world -class faculty, and state-of-the-art facilities connect to provide the students with a broad range of opportunities in both the public and private sectors of the industry. SSDAP leads the students through both practical and theoretical learning until they can master in an innovative design that reflects art and science.
The school has forged numerous connections and partnerships with schools and professionals in countries around the world. The faculty comprises academicians from internationally renowned universities such as the School of Planning & Architecture, B.I.T Mesra, National Institute of Fashion Technology (NIFT), Sheffield University, Nottingham Trent University and Delhi College of Art, University of Delhi as well as leading Architectural practitioners and Planning professionals from all over the country.

ABOUT DEPARTMENT

Architects must understand the nature of human interaction within the larger environmental context. This is the core idea on which the Department of Architecture is built upon, where architecture is understood not in the narrow terms of building, but in the larger context of the built environment. The world around us is moving at a pace more rapid than ever before, and the architectural professionals of tomorrow need to be sensitive towards the social responsibilities of environmental intervention that are an inevitable consequence when it comes to the actual practice of architecture.
Given that in the ever-changing world, the architect needs to be prepared to adapt to the environment around, the programs at the Department of Architecture recognize the multiplicity and changing nature of future roles open to the architect. The students are afforded the freedom to engage with the discipline at many levels, and through multiple channels where they are allowed to choose their own unique pathways through the course, thereby (re)creating and (re)producing themselves as professionals with multiple expertise.
The school has an interdisciplinary approach that sources from varied fields such as Mass Communication, Design, and Management etc. Architecture students will have the opportunity to tailor their course to their needs, thereby; they could be studying photography, choreography, visual communication or any other elective as a part of the larger architecture course.

Vision of Department
To be amongst the top institutes in India imparting quality education and professional skills to the students to emerge as architects of global caliber and thus the society in large

Mission of Department
- To create and sustain a stimulating and responsive academic inclusive environment.
- To regularly enhance the teaching contents & techniques in keeping with current and future trends.
- To provide a competitive and career-oriented programme.
- To encourage students to be socially responsive and responsible architects.

About Value Added Course for Session 2024-2025

Course Outcomes

In accordance with the University requirement for Value Added Courses, the Department of Architecture intends to conduct a course on “AI- Application in Architecture & Design " for the 2025-2026 session aims to advanced AI knowledge, focusing on deep learning and large language models (LLMs) for applications in generative design, spatial analysis, and project planning.

After completion of the course the students will be able to

CO1: Understand the impact of AI in Design and Architecture through real-world case studies.
CO2: Analyze design-specific AI applications, such as automated drafting, identifying challenges, and proposing solutions.
CO3: Apply deep learning techniques to solve industry problems in generative design and visualization
CO4: Evaluate ethical considerations in design AI, focusing on issues like intellectual property and automation bias.
CO5: Explore emerging trends in AI for Design and Architecture, such as real-time 3D rendering and interactive LLMs for client interaction.
CO6: Develop project-based applications demonstrating AI in design and spatial planning.

AI- Application in Architecture & Design

Date	Topic	Duration
	Advanced Prompt Engineering for Design Automation	
18-07-2025	Customizing prompts for design software (e.g., generating 3D models)	8
08-08-2025	Fine-tuning prompts to assist in spatial design tools	8
15-08-2025	Case studies on prompt engineering for automated drafting	8
	Deep Learning and LLMs in Generative Design	
22-08-2025	Basics of neural networks in design automation	8
05-08-2025	LLMs for project data analysis and automated client responses	8
12-08-2025	Applications in real-time 3D rendering and interactive design tools	8
	Ethical and Future Considerations	
19-08-2025	Exploring AI ethics in design: intellectual property, biases in generative outputs	8
10-09-2025	Emerging trends in AI for Design and Architecture: augmented reality, parametric design	8
17-09-2025	Hands-on project to develop a generative design model or design assistant tool	8
	Example - Develop a chatbot that assists with design queries, or create a model that generates optimized layouts based on client needs.	

Faculty/Trainer Profile

Name of the Trainers: Abhay kaushik

Designation: Associate Professor

Employee Code: 0006757

Department: Architecture

Mobile No. 9990469890

Email ID: abhay.kaushik@sharda.ac.in

Trainer Profile: Abhay Kaushik an Architect by degree and product designer by choice completed his Bachelors of Architecture with honors in 2009 and pursued his Master's degree from Politecnico di Milano, Italy in 2015. He worked on a range of National & International design and competition projects during his Industrial experience in India and abroad. His experience ranges from designing and executing Large scale Residential buildings to Office complexes to educational buildings.

Now, an academician from last five years he is working towards amalgamation of design practice with design pedagogy. His theory of working in academia is to propagate “How to Think instead of What to Think” ideology amongst all.

Syllabus

School:		**School of Design, Architecture & Planning**		
Department		**Architecture**		
Program:		**B.Arch**		
Branch:				
1	Course Code			
2	Course Title	**AI Application in Architecture & Design**		
3	Credits			
4	Contact Hours (L-T-P)	2-0-2		
	Course Status	VAC		
5	Course Objective	To equip students with advanced AI knowledge, focusing on deep learning and large language models (LLMs) for applications in generative design, spatial analysis, and project planning.		
6	Course Outcomes	**CO1:** Understand the impact of AI in Design and Architecture through real-world case studies. **CO2:** Analyze design-specific AI applications, such as automated drafting, identifying challenges, and proposing solutions. **CO3:** Apply deep learning techniques to solve industry problems in generative design and visualization. **CO4:** Evaluate ethical considerations in design AI, focusing on issues like intellectual property and automation bias. **CO5:** Explore emerging trends in AI for Design and Architecture, such as real-time 3D rendering and interactive LLMs for client interaction. **CO6:** Develop project-based applications demonstrating AI in design and spatial planning.		
7	Course Description	This course covers advanced AI applications in design, such as deep learning, LLMs, and generative design. Students explore real-world case studies and emerging trends in AI, while completing project-based learning to develop AI-driven design solutions.		
8	Outline syllabus			CO Mapping
	Unit 1	**Advanced Prompt Engineering for Design Automation**		
	A	Customizing prompts for design software (e.g., generating 3D models)		CO1
	B	Fine-tuning prompts to assist in spatial design tools		CO1, CO2
	C	Case studies on prompt engineering for automated drafting		CO3
	Unit 2	**Deep Learning and LLMs in Generative Design**		
	A	Basics of neural networks in design automation		CO2, CO3
	B	LLMs for project data analysis and automated client responses		CO2, CO3
	C	Applications in real-time 3D rendering and interactive design tools		CO2, CO3

	Unit 3	**Ethical and Future Considerations**			
	A	Exploring AI ethics in design: intellectual property, biases in generative outputs			CO4
	B	Emerging trends in AI for Design and Architecture: augmented reality, parametric design			CO5
	C	Hands-on project to develop a generative design model or design assistant tool Example - Develop a chatbot that assists with design queries, or create a model that generates optimized layouts based on client needs.			CO6
	Mode of examination	Practical			
	Weightage Distribution	CA	ETE		
		75%	25%		
	Text book/s*				
	Other References				