

Masters in Digital Architecture

PROGRAM OUTCOMES (PO)

- **PARAMETRIC KNOWLEDGE BASE** – Ability to understand concepts and skills for architectural geometry construction using parametric modelling processes and having knowledge of theoretical framework towards development of contemporary parametric modelling processes for customizing generative design systems
- **PARAMETRIC SKILL BASE** - Proficiency in digital design and fabrication towards the creative design of an advanced level interactive built environments
- **TECHNICAL AND COMMUNICATION SKILL**- Proficiency in describing various elements of architectural design as sets of parameters which are then expressed as numeric and geometric relationships. Develop ability to communicate parametric process and design through graphical technical and communication skills.
- **CONTINUING PROFESSIONAL DEVELOPMENT**- To be able to expand the acquired proficiency in parametric processes or to develop the area of study so that it contributes to contemporary architectural practice
- **DIVERSITY & EXPOSURE TO A MULTIDISCIPLINARY ENVIRONMENT**- Ability to apply parametric skills to allied design fields and Work in teams on interoperability platforms

Sr No	Program outcomes	Subjects in curriculum
1	Parametric knowledge base	Digital Design Studio I,II&III DA process theories and History-1,II,III
2	Parametric design skills	Parametric Softwares Digital Fabrication I,II&III Analysis Software
3	Technical and communication skill	Analytical diagramming and Architectural Representation Parametric urban mapping Research Methodologies -I
4	Continuing professional development	Practical training Digital Architectural Project Elective III Research Paper
5	Diversity & Extension to a multidisciplinary environment	Elective –I Elective-II
Sr No	Electives	Tentative Subjects for Electives
01	Elective I(Sem I)	Digital Materiality and Tectonics, Performative design, Techniques and Technologies in Morphogenetic Design
02	Elective II (Sem II)	Product design, Furniture Design, Automotive design and styling and Fashion technology.

03	Elective III(Sem IV)	Open Elective –Choice based -interdisciplinary elective
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PROGRAM EDUCATIONAL OBJECTIVES (PEO)-

1. **THEORETICAL BASE** – To inquire into the varied nature and practice of computation in architectural design, and the ways in which design meaning, intentions, and knowledge are constructed through parametric thinking, representing, sensing, and making. They focus on the development of innovative computational tools, processes, and theories, and their application
2. **KNOWLEDGE AND SKILLS** - to enhance skills wrt creative design of an advanced level interactive built environments that pursues transformation of conceptual design to production documentation and manufacturing of built environments using contemporary digital mediums
3. **RESEARCH** - To encourage students to enhance understanding of a specific field of interest, and to initiate them towards experimental leanings in the field of Digital architecture and fabrication practice
4. **EXTENSION & COLLABORATION** -To expose the students to the prevalence of collaborative platforms in the field of Parametric architecture and digital research and to allow them to test their skills of digital design and production by venturing in any allied field of practice /research

CO(Course outcome)

- Digital technologies with its applications have been a catalyst in changing the way we live and aspire and have significantly changed the way architecture is practiced and produced. The focus of the curriculum is to prepare architectural academics for future aspirations. The intent is to reconfigure learning patterns that are inspired by a desire to harness increasingly sophisticated digital technologies in architectural design and construction.
- Digital architecture covers the entire gamut of digital tools, software's and technologies as and when they are applied to architectural design and execution process and thus relates to the entire span of the built environment based on digital technologies ranging from analysis, mapping to computational design, services, information modelling and construction management.
- At the heart of the curriculum are the parametric design processes that are used for generation of different formal expressions of a design concept. The term parametric design implies the representation of a design with a series of associative operations, controlled by constraints and parameters. These are defined in parametric software's that are able to generate interactive forms in the three dimensional (3D) space. The realization of such designs is facilitated by CAM processes essentially known as digital fabrication. With the use of parametric design tools, students/practitioners can study the interactive relationships of architectural designs in the early steps. By enabling the enlarged set of performances assessed impact choices at an early stage, parametric tools enhance interdisciplinarity, and creates a visual link between form

and numeric performance evaluations, which in turn reduce the investment in poor performing solutions. Furthermore, they can revise basic aspects of the actual construction, including material, manufacturing technologies and structural components. This understanding and formulation of a procedural symbiotic relationship between conception, generation, and production is the crux of the digital architecture curriculum. The gamut of functional and formal knowledge includes parametric design methodologies, digital fabrication, parametric process theories, parametric software proficiencies, Interactive architecture through embedded systems, parametric urbanism as its core intent and are supported by a variety of subjects like, analytical diagramming and parametric thinking, evolutionary processes and morphogenetic strategies, performance based studies through analysis software's, parametric urbanism and research methodologies Experimental leanings in the field are explored through subjects like digital tectonics and materiality, parametric processes in allied fields, generative urbanism and responsive design in the form of electives.

Mechanisms used for attainment of these POs,COs,PSOs.

The digital Architecture department specifically takes efforts to integrate the analogue and digital design methods in the studio. The Fabrication studio briefs are all attuned to the exchange between analogue and digital formats of experimentation and data exchange that enable us to appropriate makeability of the digital designs on site in the Indian conditions.

- The studio(Design and Fabrication) briefs allows students to create and research on geometries, material and design that have no precedence and are also converted into life scale enclosure installations and furniture giving them a credible experience of learning by doing
- The departments make attempts at converting students projects into life scale prototypes to be able to facilitate the concept of learning by doing
- The presence of the Fabrication lab in the form of DFL(Digital Fabrication Lab) allows Digital tools – computers, software, and imaging, modelling to stretch the boundaries of architecture both in terms of form and design process. The facility allows us to approach architecture as a craft.

