



SMT. K. L. TIWARI COLLEGE OF ARCHITECTURE

Approved by Council of Architecture, New Delhi & DTE, Maharashtra State &
Affiliated to University of Mumbai | DTE Code No.: AR 3484

PROGRAMME OUTCOMES (PO)

The programme outcomes after successful completion of B. Arch and becoming an architect are aimed to enable students with the ability in the following:

- PO 1 : Architectural Knowledge:** Apply a wide range of architectural knowledge which will help them to practice architecture as a profession. Students will be equipped with knowledge to offer innovative solutions to complex and wide range of architectural projects. This knowledge will also enable students to orient themselves for further specializations in allied fields like landscape design, set-design, heritage conservation, urban design, architectural journalism, product design, etc.
- PO 2 : Professional Competency:** Analysis and identification of appropriate interventions through creative, critical and analytic thinking, aptitude to research, develop ability for innovation, collaboration, and inclusive approach.
- PO 3 : Technical Competence:** Systematic exploration of architectural design through sequential development in the complexity of design issues. Methodical Integration of all other allied subjects at different levels. Identify, formulate, precedent studies in form of case studies, literature study for analysis and inferences to reach conceptualization for design project. Considerations of climatic & regional studies, sustainability, environmental issues, structural detailing, services, byelaws, and norms etc to develop a design solution. Optimum development in terms of architectural design, acquiring required skills (communication skills, presentation skills, model making skills) and requisite professional capabilities and discipline.
- PO 4 : Critical Conscious Thinking :** understand one self with respect to their own capabilities, interest and skills. Able to evolve through experiential and conscious learning initiatives and achieve awareness in future goals and career paths. To be able to analyze one's own decisions through fact finding, participatory interactions, research and questioning.
- PO 5 : Socially responsible architects:** Apply reasoning informed by the contextual knowledge to assess societal, health, hygiene, public welfare, safety, legal, regional, cultural issues, and the subsequent professional responsibilities relevant to architectural practice: Awareness and sensitivity towards various aspects of built and unbuilt environment. Understand the impact of the professional architectural solutions in societal and environmental contexts, and demonstrate and apply the knowledge of, and need for sustainable development by multi- faceted approach



- PO 6: Quantitative Reasoning:** Use research-based knowledge, and research methods including collaborations, alternative designs, comparative analysis, and interpretation of various types of data, project expectations, user requirements and synthesis of the information to provide creative and innovative design solutions. Select and apply appropriate techniques, resources, and advanced architectural, engineering and IT tools including prediction and modelling to complex design solutions with an understanding of the limitations. Including various presentation techniques to explain the solutions.
- PO 7 : Ethical Thinking:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the architectural practice. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
- PO 8 : Innovative Thinking:** Innovative learning consisting an humanitarian approach which benefits the society at large. Gathering awareness towards entrepreneurship, incubations and startups. Consciously able to choose passionate careers for practice and Higher studies. Clarity in bridging the academia and Industry gap and be able to gather professional pool of resources for supporting and processing their innovative thoughts to reality.



Programme : Bachelor of Architecture

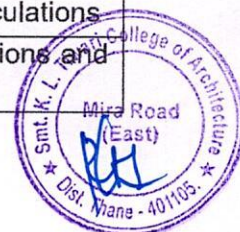
COURSE OUTCOMES (CO)**FIRST YEAR B. ARCH. : SEMESTER - 1**

| Sr. No. | Course Code & Name | Course Outcomes | |
|---------|---------------------------------------|-----------------|---|
| 1 | 101 - Architectural Design Studio - 1 | CO 1 | Knowledge of anthropological data & ergonomics |
| | | CO 2 | Understanding activities and their relationship with spaces |
| | | CO 3 | Developing language vocabulary, visualization, scale & Proportion |
| | | CO 4 | Exposure to architecture, architects, and their works |

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| 2 | 102 - Allied Design Studio - 1 | CO 1 | Introduction of creative thinking through understanding and application of principles of arts, aesthetics & design |
| | | CO 2 | Imbibing & developing visual & graphic skills, creative & imagination skills, exposure to architectural design vocabulary and relating them to architectural design |
| | | CO 3 | Exposure & development of freehand drawing & rendering skills in different medium & using it as tool of expressing ideas. |
| | | CO 4 | Knowledge of Principles of 2-D & 3-D compositions |

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| 3 | 103 – Architectural Building Construction & Materials - 1 | CO 1 | Introduction & understanding of elements of building substructure & superstructure, role of various elements and components of buildings |
| | | CO 2 | Understanding & knowledge of load bearing & frame structures, study of simple buildings from foundation to roof |
| | | CO 3 | Introduction & understanding of basic construction systems, construction drawing practices & conventions |
| | | CO 4 | Understanding & preparation of technical detail drawings of various basic construction components and systems. |
| | | CO 5 | Introduction & understanding of various building materials their properties and applications aided by hands-on workshops |
| | | CO 6 | Knowledge of natural & artificial building materials with strong emphasis on selection based on technology, aesthetics, socio-cultural, socio-economic, environmental aspects. |

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| 4 | 104 – Theory & Design of Structures - 1 | CO 1 | Introduction & scope of theory of structures for architects, technical names, role of various structural systems and components. |
| | | CO 2 | Understanding fundamentals of mechanics, S.I. system |
| | | CO 3 | Understanding forces, loads, moments, and their calculations |
| | | CO 4 | Understanding conditions of equilibrium, beam reactions and their calculations |



FIRST YEAR B. ARCH. : SEMESTER – 1

| Sr. No. | Course Code & Name | Course Outcomes | |
|---------|----------------------|-----------------|--|
| 5 | 105 – Humanities - 1 | CO 1 | Exploring meaning of terms Art, Culture, Society, Civilization, architecture & their inter relationship during prehistoric period to modern. |
| | | CO 2 | Understanding history of culture through human cultural development, products, and sociology |
| | | CO 3 | Study of evolution of various styles of art & architecture with examples from various civilizations of the world |
| | | CO 4 | Understanding fundamental design principles & architectural expression; appropriate to place & introduction to time-line to understand the role of society, resources and emergence of architecture. |

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| 6 | 106 – Environmental Studies - 1 | CO 1 | Introduction & Understanding of natural environment, built environment, ecology and ecosystems, biodiversity and co-existence |
| | | CO 2 | Understanding natural resources (forest, water, mineral, food, energy & land) |
| | | CO 3 | Introduction & Understanding of basic climatology & its constituents. |
| | | CO 4 | Knowledge of building types & lifestyles in different geographic zones and climatic zones |

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| 7 | 107 – Architectural Representation & Detailing - 1 | CO 1 | Introduction & inculcating studio work culture - use & importance of drawing instruments and architectural drawings |
| | | CO 2 | Understanding & knowledge of graphical representation in Architecture |
| | | CO 3 | Application of different scales and architectural lettering |
| | | CO 4 | Understanding & knowledge of plane geometry, solid geometry, and orthographic projections |
| | | CO 5 | Development of freehand sketching as a tool for expression of thoughts & ideas |
| | | CO 6 | Building skills to make architectural representation models, study models & compositions using different materials |



| Sr. No. | Course Code & Name | Course Outcomes | |
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| 8 | 120 – College Projects - 1 | CO 1 | Participation in Seminars as organised by college to gain awareness, exposure, and knowledge on various topics |
| | | CO 2 | Participation in Guest lectures as organised by college to gain awareness, exposure, and knowledge on various topics |
| | | CO 3 | Participation in Exhibitions/ workshops as organised by college to gain awareness, exposure, and knowledge on various topics |
| | | CO 4 | Participation in Architectural competitions / site visits as organised by college to gain awareness, exposure, and knowledge on various topics |
| | | CO 5 | Participation in Study tours as organised by college to gain awareness, exposure, and knowledge on various cultures and regional architecture |
| | | CO 6 | Participation in additional lectures as organised by college to gain awareness, exposure, and knowledge on various topics |

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| 9 | 121 – Elective - 1 | CO 1 | Developing skills in non-graphic applications of computer as required for architectural profession. |
| | | CO 2 | Developing and application of software skills for word processing, spread sheets, power point presentations |
| | | CO 3 | Inculcating systems for proper storage & processing of data with efficient file management system |
| | | CO 4 | Overview of various software tools & their applications in the practice of architecture & allied fields |

FIRST YEAR B. ARCH. : SEMESTER – 2

| Sr. No. | Course Code & Name | Course Outcomes | |
|---------|---------------------------------------|-----------------|---|
| 1 | 201 - Architectural Design Studio - 1 | CO 1 | Knowledge of hierarchical spaces |
| | | CO 2 | Understanding activities and their relationship with spaces |
| | | CO 3 | Functions, Form and Utility. Preparing Architectural design drawings. |
| | | CO 4 | Exposure to ideas, tangible and intangible effect of the surrounding on site and space planning for different users |

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| 2 | 202 - Allied Design Studio - 1 | CO 1 | Innovating through creative thinking and create free flowing designs, Understand materials and their impacts. Passive and natural light and ventilation importance. |
| | | CO 2 | Imbibing & developing visual & graphic skills, creative & imagination skills, exposure to architectural design vocabulary and relating them to architectural design |
| | | CO 3 | Exposure & development 3d spaces in different medium & using it as tool of expressing ideas. |
| | | CO 4 | Knowledge of Principles of 2-D & 3-D compositions |



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| 3 | 203 – Architectural Building Construction & Materials - 1 | CO 1 | Introduction & understanding of elements of building Material such as Timber, stone and glass. |
| | | CO 2 | Understanding & knowledge of timber structures from foundation to roof |
| | | CO 3 | Introduction & understanding of basic construction systems, construction drawing practices & conventions |
| | | CO 4 | Understanding & preparation of technical detail drawings of various basic construction components and systems. |
| | | CO 5 | Introduction & understanding of various building materials their properties and applications aided by hands-on workshops |
| | | CO 6 | Knowledge of natural & artificial building materials with strong emphasis on selection based on technology, aesthetics, socio-cultural, socio-economic, environmental aspects. |

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| 4 | 204 – Theory & Design of Structures - 1 | CO 1 | Introduction & scope of theory of structures for architects, technical names, role of various structural systems and components. |
| | | CO 2 | Understanding fundamentals of mechanics, S.I. system |
| | | CO 3 | Understanding forces, centre of gravity, bending moment diagrams |
| | | CO 4 | Understanding conditions of equilibrium, beam reactions and their calculations |



FIRST YEAR B. ARCH. : SEMESTER - 2

| Sr. No. | Course Code & Name | Course Outcomes | |
|---------|----------------------|-----------------|--|
| 5 | 205 – Humanities - 1 | CO 1 | Exploring and learning early and ancient civilizations of Egypt, Mesopotamia, Greece and Rome |
| | | CO 2 | Understanding history of culture through human cultural development, products, and sociology |
| | | CO 3 | Study of evolution of various styles of art & architecture with examples from various civilizations of the world |
| | | CO 4 | Understanding fundamental design principles & architectural expression; appropriate to place & introduction to time-line to understand the role of society, resources and emergence of Architecture. |

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| 6 | 206 – Environmental Studies - 1 | CO 1 | Introduction & illustrating the concepts of sustainable development, climatology, energy resources and renewable energy techniques |
| | | CO 2 | Understanding natural local resources as a building material and understand its benefits. |
| | | CO 3 | Introduction & Understanding of advanced climatology & its constituents. |
| | | CO 4 | Designs of building types & lifestyles in different geographic zones and climatic zones |

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| 7 | 207 – Architectural Representation & Detailing - 1 | CO 1 | Introduction & inculcating detailed drawing nuances. |
| | | CO 2 | Understanding & knowledge of sciography, perspectives in advanced 3D models |
| | | CO 3 | Application of different scales and architectural lettering |
| | | CO 4 | Understanding & knowledge of plane geometry, solid geometry, and orthographic projections |
| | | CO 6 | Architectural representation of outdoor landscapes and indoor areas. |



| Sr. No. | Course Code & Name | Course Outcomes | |
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| 8 | 220 – College Projects - 2 | CO 1 | Participation in Seminars as organised by college to gain awareness, exposure, and knowledge on various topics |
| | | CO 2 | Participation in Guest lectures as organised by college to gain awareness, exposure, and knowledge on various topics |
| | | CO 3 | Participation in Exhibitions/ workshops as organised by college to gain awareness, exposure, and knowledge on various topics |
| | | CO 4 | Participation in Architectural competitions / site visits as organised by college to gain awareness, exposure, and knowledge on various topics |
| | | CO 5 | Participation in Study tours as organised by college to gain awareness, exposure, and knowledge on various cultures and regional architecture |

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| 9 | 221 – Elective - 2 | CO 1 | Developing communication skills, team work and leadership qualities. |
| | | CO 2 | Visual communication through film and media, set Design and photography |
| | | CO 3 | Understanding the various nuances in foreground & background aspects of a space |
| | | CO 4 | Expressing narratives through colour, story boarding and camera lens. |

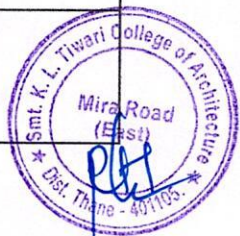


SECOND YEAR B. ARCH. : SEMESTER – 3

| Sr. No. | Course Code & Name | Course Outcomes | |
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| 1 | 301 - Architectural Design Studio - 1 | CO 1 | Understanding rural and cultural design spaces |
| | | CO 2 | Understanding activities and their relationship with spaces |
| | | CO 3 | Exploring Functions, traditions, tribal art and regional architecture. |
| | | CO 4 | Exposure to ideas, tangible and intangible effect of the surrounding on site and space planning for different users. |
| 2 | 302 - Allied Design Studio - 1 | CO 1 | Innovating through interior design spaces of residential houses |
| | | CO 2 | Imbibing & developing visual & graphic skills, creative & imagination skills, exposure to interior design vocabulary and relating them to functional design |
| | | CO 3 | Exposure & development to detail drawings of electrical, services and false ceilings, related to Interior spaces.. |
| | | CO 4 | Knowledge of Principles of 2-D & 3-D compositions |
| 3 | 303 – Architectural Building Construction & Materials - 1 | CO 1 | Introduction & understanding of elements of building Material such as Timber, stone and glass. |
| | | CO 2 | Understanding & knowledge of timber structures from foundation to roof |
| | | CO 3 | Introduction & understanding of basic construction systems, construction drawing practices & conventions |
| | | CO 4 | Understanding & preparation of technical detail drawings of various basic construction components and systems. |
| | | CO 5 | Introduction & understanding of various building materials their properties and applications aided by hands-on workshops |
| | | CO 6 | Knowledge of natural & artificial building materials with strong emphasis on selection based on technology, aesthetics, socio-cultural, socio-economic, environmental aspects. |



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| 4 | 304- Theory & Design of Structures 3 | CO1 | Analyze simply supported and cantilever beams using Theory. |
| | | CO2 | Students will be able to evaluate deflections of beams using DI and Macaulay's method |
| | | CO3 | Apply Material testing of various structural components shear forces and bending moment. Assess structural properties of construction materials. |
| 5 | 305- Humanities | CO1 | Distinguish between the characteristics of different building elements in classical architecture and city planning. |
| | | CO2 | Understand impact of climate and social changes on development of architectural style during medieval period |
| | | CO3 | Students will be able to differentiate the architectural styles based on their climate, social conditions, material etc. |
| | | CO4 | Critically analyze the structure through different aspects of social life, technical details and |
| 6 | 306- Environmental Studies | CO1 | To explain fundamentals of climatology in terms of climate zones of India, macro and micro climate and vernacular architectural methods of construction according to the relevant climatic zones |
| | | CO2 | Interpret wind flow patterns around the building and sun path, to create Drawings and models related to sun path, wind flow around the buildings |
| | | CO3 | Students will be able to explain Passive methods in Architectural design |
| 7 | 307- Architectural Representation & Detailing 3 | CO1 | To create three dimensional entity through 2 point Perspective Drawings |
| | | CO3 | To create freehand drawing through observation & render by exploring different mediums |



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| | | CO4 | Students will be able to compose sheets in different aspects such as line weight, line types, dimensioning, labelling etc for measured drawings |
| 8 | 308- Architectural Building Services | CO1 | To understand Services related to water supply for residential buildings– through its source, distribution, collection and recycle. |
| | | CO2 | Students will be able to differentiate various types of traps used with appliances and other fittings & fixtures. |
| | | CO3 | Students will be able to calculate the capacity of water tanks using the standard formula and design services water supply layouts |

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| 9 | 309- Architectural Theory 1 | CO1 | Students will be able to summarize ideas in architecture through writings in architecture |
| | | CO2 | Students will be able to classify changing ideas in architecture chronologically over time |
| | | CO3 | Students will be able to analyse theories in architecture through readings, theoretical texts and architectural criticism |
| | | CO4 | Students will be able to critique ideas and theories in architecture through class discussions and debates |
| 10 | 320- College Project 3 | CO1 | Participation and team work in competitions, youth fests and exhibitions |
| | | CO2 | Participation in college fest, seminars, site visits |
| | | CO3 | NASA participation and involvement in decision making, organizing and co-ordinating the event |
| | | CO4 | Participations in Outreach, Social awareness and participatory activities. |



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| 11 | 321- Elective 3 | CO1 | Students will be able to interpret the basic software interface for AutoCAD and draft shapes and lines |
| | | CO2 | Students will be able to illustrate the use of commands required for drafting a plan in AutoCAD |
| | | CO3 | Students will be able to create a basic layout of a house in AutoCAD |

Fourth Year Semester – IV

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| 1 | 401- Architectural Design 4 | CO1 | Students will be able to interpret user requirements and design intent in changing rural context through topical study of on-going government rural schemes and civic administration |
| | | CO2 | Students will be able to analyse physical and social context of the project through study of site, surrounds and precedents |
| | | CO3 | Students will be able to formulate a functional and conceptual design briefly demonstrating their understanding through an essay |
| | | CO4 | Students will be able to assess various methodologies and their outcomes through the design process and technical drawing details. |
| 2 | 402- Allied Design 4 | CO1 | Students will be able to interpret user requirements and design intent in changing rural context through detailed study through client research |
| | | CO2 | Students will be able to organise the research and relate it to the space received through study of site and space planning |
| | | CO3 | Students will be able to plan the space and create a design compiling all their learning by demonstrating their learning by drafting and planning |
| | | CO4 | Students will be able to justify the purpose of their design and various options through design process |



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| | | CO5 | Students will be able to illustrate their client needs through design through scaled drawings and graphical representation |
| | | CO6 | Students will be able to design a complete residential space compiling the entire plan and needs that functions through a complete design presentation |
| 3 | 403- Architectural Building Construction & Material | CO1 | Students will be able to summarize properties, characteristics and various application of steel as a construction material through a field visit of a steel structure and creating scaled physical models and drawings |
| | | CO2 | Students will be able to design foundation plan, floor plans, and structural column layout for a warehouse building in steel |
| | | CO3 | Students will be able to create construction details for various connections of steel column with RCC pad footing, steel column splicing, steel beam to column and beam to beam connections for the warehouse building |
| | | CO4 | Students will be able to create construction details for various parts/connections of steel deck floor, staircase and truss roof for the warehouse building |



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| 4 | 405- Humanities | CO1 | Interpreting Transition of architectural styles and techniques influencing future design through visual, technical and technological development through critical analyses |
| | | CO2 | Students will be able to classify Shortcomings due to materials with respect of different ages |
| | | CO3 | Students will be able to analyse different features of Temples in accordance with Parameters of aesthetics, administrative, social and cultural adaptation in local architecture |
| 5 | 407- Architectural Representation & Detailing 4 | CO1 | Learning the techniques of Measure Drawing |
| | | CO2 | Understand the importance of detailing, documentation and accurate scaled drawings |
| | | CO3 | Students will be able to implement process of chain surveying to calculate area of given plot |



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| 6 | 408- Architectural Building Services | CO1 | Students will be able to explain building drainage system, analyse site drainage systems. |
| | | CO2 | Students will be able to analyse site drainage system in drawings and design in building layouts. |
| | | CO3 | Students will be able to justify rainwater harvesting & understand septic tank planning. |
| 7 | 409- Architectural Theory 2 | CO1 | Understand Fundamentals of architectural research its objectives and methodologies through readings and writings.. |
| | | CO2 | Students will be able to summarize Architectural research and build up documentation and data collection through photo essays and presentations |
| | | CO3 | Students will be able to analyse the collected data and represent it graphically through photo essays and presentations |
| | | CO4 | Students will be able to critique the analysed data with reflective reasoning/writing/presentation through illustrations in groups |

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| 8 | 320- College Project 3 | CO1 | Participation and team work in competitions, youth fests and exhibitions |
| | | CO2 | Participation in college fest, seminars, site visits |
| | | CO3 | NASA participation and involvement in decision making, organizing and co-ordinating the event |
| | | CO4 | Participations in Outreach, Social awareness and participatory activities. |

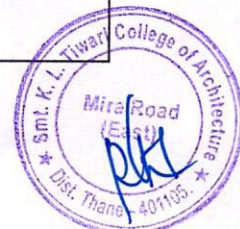


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| 9 | 421- Elective 4 | CO1 | Students will be able to interpret user interface and basic shapes, faces and edges in sketch up environment |
| | | CO2 | Students will be able to implement 3D Sketch Up environment effectively through 3d models |
| | | CO3 | Students will be able to compose objects and components and 3d models of simple compositions |
| | | CO4 | Students will be able to construct 2d models into 3d interface and work on architectural plans |
| | | CO5 | Students will be able to assess use of Cameras, views and model information in a complete architectural drawing |
| | | CO6 | Students will be able to illustrate plans, sections and elevations, walkthrough for a given project |

Third Year: SEMESTER 5

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| 1 | 501- Architectural Design 5 | CO1 | Students will be able to classify various parameters determining site study in relation to a particular activity and historical importance. |
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| | | CO2 | Students will be able to interpret design in response to site, its characteristics and context |
| | | CO3 | Students will be able to implement passive design strategies and local construction techniques and develop self-sustaining spatial forms. |
| | | CO4 | Students will be able to create various architectural forms and spaces required for various activities in relation to proximity and other previously derived inferences. |
| | | CO5 | Students will be able to outline building services and construction techniques to demonstrate the practicality of the built form. |
| 2 | 502- Allied Design 5 | CO1 | Students will be able to explain fundamentals of landscape architecture like design principles and elements |
| | | CO2 | Students will be able to analyse land morphology, slopes, hydrology of a given site |



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| | | CO3 | Students will be able to apply knowledge of slope analysis and surface drainage mapping for a given site |
| | | CO4 | Students will be able to evaluate various parameters in a given site to draw inferences for design strategies |
| | | CO5 | Students will be able to design landscape intervention scheme for a small project |
| | | CO6 | Students will be able to create strategies for design intervention based on site analysis, slope analysis, etc. |
| 3 | 503- Architectural Building Construction 5 | CO1 | Students will be able to interpret purpose of foundations and factors affecting the same. |
| | | CO2 | Students will be able to differentiate different types of foundations and consider various foundations. |
| | | CO3 | Students will be able to outline particular type of foundation system and the need for them. |

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| | | CO4 | Students will be able to design foundations depending on the parameters. |
| | | CO5 | Students will be able to infer use of various canopies and building skin based on latest trends and techniques |
| | | CO6 | Students will be able to construct canopy and choose building skin |
| 4 | 504- Theory & Design of Structures 5 | CO1 | Students will be able to outline use of limit state design for steel structure |
| | | CO2 | Students will be able to design bolted / welded connections for members of steel structure |
| | | CO3 | Students will be able to design tension members in a steel structure |
| | | CO4 | Students will be able to design compression members in a steel structure |
| | | CO5 | Students will be able to design beams in a steel structure |
| | | CO6 | Students will be able to illustrate use of slab base / gusseted base and grillage foundation in a steel structure |



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| 5 | 505- Humanities 5 | CO1 | Students will be able to explain Modern movements in art and architecture in the world and India |
| | | CO2 | Students will be able to analyse Post-modern movements in art and architecture |
| | | CO3 | Students will be able to analyse influence of Modern master architects in the field of architecture |
| | | CO4 | Students will be able to illustrate Critical Regionalism in India |
| 6 | 507- Architectural Representation & Detailing | CO1 | Students will be able to implement methods of approximate estimates using current rates in Mumbai |

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| | | CO2 | Students will be able to calculate detailed quantities of material and abstract of estimate using long wall- short wall or centreline method |
| | | CO3 | Students will be able to analyse rates for civil works |
| | | CO4 | Students will be able to calculate quantities for civil works offload bearing structure |
| | | CO5 | Students will be able to calculate quantities for civil works of framed structure |
| | | CO6 | Students will be able to formulate detailed specifications for a residential building |
| 7 | 508- Architectural Building Services 3 | CO1 | Students will be able to illustrate basics of electrical distribution, supply, wiring and safety in a building. |
| | | CO2 | Students will be able to outline electrical layout of a small space |
| | | CO3 | Students will be able to analyse basics of artificial direct and indirect lighting in a building |
| | | CO4 | Students will be able to argue the basic terminologies of sound propagation, acoustics of studios and auditoriums |
| 8 | 509- Architectural Theory 3 | CO1 | Students will be able to interpret Fundamentals of architectural research its objectives and methodologies |



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| | | CO2 | Students will be able to summarize Architectural research and build up documentation and data collection |
| | | CO3 | Students will be able to analyse the collected data and represent it graphically |
| | | CO4 | Students will be able to critique the analysed with reflective reasoning/writing/presentation |
| | | CO5 | Students will be able to formulate data collected based on site visits through research through 1) observations 2) Reflective Reasoning 3) Critical writing |

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| 9 | 520- College Project 3 | CO1 | Participation and team work in competitions, youth fests and exhibitions |
| | | CO2 | Participation in college fest, seminars, site visits |
| | | CO3 | NASA participation and involvement in decision making, organizing and co-ordinating the event |
| | | CO4 | Participations in Outreach, Social awareness and participatory activities. |

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| 10 | 521- Elective 5 | CO1 | Understanding allied areas of graphic design, Architecture journalism as expressive narratives. |
| | | CO2 | Learning techniques of documenting, mapping, researching and writing |
| | | CO3 | Exploring Critical community interventions and urban issues as an important aspect of design. |

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| 11 | 521- Elective 5 (Software) | CO1 | Students will be able to implement the software skills in their design development |
| | | CO2 | Students will be able to apply the software and create different design options |



Third Year B.Arch: Semester 6

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| 1 | 601- Architectural Design 6 | CO1 | Students will be able to interpret Nature of working spaces and differentiate co-working spaces architecturally. |
| | | CO2 | Students will be able to analyse the site based on parameters such as site services, circulation etc. |
| | | CO3 | Students will be able to illustrate the inferences on their design with workability of structures and services. |
| | | CO4 | Students will be able to organise spaces and activity cumulating inferences from case studies and site studies. |
| 2 | 602- Allied Design 6 | CO1 | Students will be able to illustrate the attributes of natural elements through scaled drawings of a natural landscape setting |
| | | CO2 | Students will be able to create an ideas based design for a space in context of nurturing childhood through nature based play areas through a site visit and followed by a short design exercise |
| | | CO3 | Students will be able to analyse the various landscape elements of a given site, users and their inter-relationship, topography, hydrology, vegetation, climate, etc. through site analysis |
| 3 | 603- Architectural Building Construction 6 | CO1 | Students will be able to distinguish various structural system based upon span and advanced construction system |
| | | CO2 | Students will be able to analyse parameters for various conditions to construct large span bays |
| | | CO3 | Students will be able to assess thumb rules to calculate parameters of the structure system for different advanced floors |



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| | | CO4 | Students will be able to justify the use of particular large span bay according to the mentioned use and thumb rules |
| | | CO5 | Students will be able to design long span in their semester architectural design with respect to design demands and application of given specifications |
| | | CO6 | Students will be able to explain various types of precast and prefab systems in different conditions. |
| 4 | 604- Theory & Design of Structures 6 | CO1 | Students will be able to differentiate between types and grades of concrete used in construction |
| | | CO2 | Students will be able to design framed structural elements using IS 456 -2000 |
| | | CO3 | Students will be able to justify the use of RCC grid floors for long spans |
| | | CO4 | Students will be able to critique use of RCC flat slab against the conventional construction |
| 5 | 605- Humanities 6 | CO1 | Students will be able to analyse global urbanization trends by analysing one international urban agglomeration |
| | | CO2 | Students will be able to analyse urbanization trends in India by analysing one Indian urban agglomeration |
| | | CO3 | Students will be able to apply mass housing and infrastructural trends in India post-independence |
| 6 | 607- Architectural Representation & Detailing | CO1 | The critical purpose of working drawings, guidelines, standards, setting out a plot and locating a building on the plot for a RCC framed structure to be realized. |
| | | CO2 | Practical knowledge for organizing column placement in plan, beam framing plans for all levels, foundation plan with isolated footings and column centre line plan for a RCC framed structure – and the experience on site. |

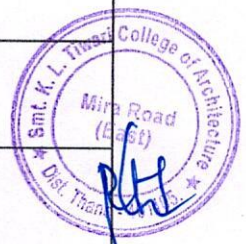


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| | | CO3 | Methodology and language of working drawings. Precise and clear instructions through line work and universal language of drawings to be understood. |
| | | CO4 | Understand the relation between the site, labourers, instructions and detailed drawings. |
| 7 | 608- Architectural Building Services 4 | CO1 | Students will be able to explain Fire fighting regulations and code of safety for high rise buildings |
| | | CO2 | Students will be able to compare Different fire fighting systems, building materials, different water supply systems for buildings |
| | | CO3 | Students will be able to implement active fire fighting system on current semester design according to thumb rules and parameters learnt |
| | | CO4 | Students will be able to analyse various vertical high-rise system with detailed terminologies |
| 8 | 620- College Project 6 | CO1 | Participation and team work in competitions, youth fests and exhibitions |
| | | CO2 | Participation in college fest, seminars, site visits |
| | | CO3 | NASA participation and involvement in decision making, organizing and co-ordinating the event |
| | | CO4 | Participations in Outreach, Social awareness and participatory activities. |



Fourth Year B.Arch: Semester 7

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| 1 | 621- Elective 6 (Revit) | CO1 | Learn to implement and work in three dimensional modelling for architectural designs |
| | | CO2 | Understand the BIM use of Revit software for varied drawings including walkthroughs. |
| | | CO3 | Rendering, material specification and energy efficiency know how. |
| 2 | 701- Architectural Design 7 | CO1 | Advanced Design brief for high rise projects in residential and commercial needs to be decoded thoughtfully and critically. |
| | | CO2 | Intense study of Bye laws, types of housing schemes, vertical space designs, sustainability and functionality will be needed. |
| | | CO4 | Students will be able to formulate site planning and other analytical studies related to services, construction and environmental aspects Formulating design strategies for the benefit of the society through inclusiveness to be designed. |
| | | CO5 | Coordination of advanced services, HVAC, construction techniques to be innovated and seamlessly embedded in the design. |
| 3 | 702- Allied Design 7 | CO1 | Students will be able to explain fundamentals of Town Planning, like planning principles and elements |
| | | CO2 | Students will be able to analyse land use development, like growth patterns and infrastructure |
| | | CO3 | Students will be able to evaluate various parameters of planning, to draw inferences for design strategies |
| | | CO4 | Students will be able to design planning intervention, for the given site with justification. |
| 4 | 703- Architectural Building Construction 7 | CO1 | Students will be able to distinguish various foundation system as per soil conditions |
| | | CO2 | Students will be able to analyse various pile foundation for various ground conditions |
| | | CO3 | Students will be able to analyse different types of excavation and waterproofing system for basements |



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| | | CO | Students will be able to explain the construction techniques for high rise building with consideration of wind load and earthquake techniques |
| 5 | 704- Theory & Design of Structures 7 | CO1 | Students will be able to assess suitability of deep foundation with respect to building and soil type |
| | | CO2 | Students will be able to design combined footing, pile & pile cap. |
| | | CO5 | Students will be able to evaluate earthquake force to resist the same safely |
| | | CO6 | Students will be able to illustrate principles of structural design of tall buildings |
| 6 | 707- Architectural Representation & Detailing 7 | CO1 | Students will be able to calculate the various required areas for the purpose of evaluating the proposed buildings/ construction w.r.t FSI, carpet area, construction area |
| | | CO2 | Students will be able to analyse the various required rules and regulations for a particular project prospect |
| | | CO3 | Students will be able to apply the various building requirements according to the building plans |
| | | CO4 | Students will be able to interpret various norms and bye laws wherever required and prepare approval drawings. |
| 7 | 708- Architectural Building Services 5 | CO1 | Students will be able to distinguish different Air Conditioning systems available in the market |
| | | CO2 | Students will be able to justify the selection of air conditioning system applicable to their design |



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| | | CO3 | Students will be able to explain the concept of natural ventilation and human comforting the buildings |
| | | CO4 | Students will be able to argue the application and selection of mechanical system in their design |
| 8 | 710 - Professional Practice 1 | CO1 | Students will be able to interpret The professional role, responsibilities, duties, liabilities of Architects towards society and follow the code of conduct of COA |
| | | CO2 | Students will be able to formulate Role of professional bodies and Architect's Registration Act 1972 set up by the Council of Architecture |
| | | CO3 | Students will be able to implement organisation structure and Nature of partnership, registration of firm and dissolution Small practice, medium practice & Large practice. |
| | | CO4 | Students will be able to infer types of competitions and Copy write Act as a Practicing architect, understand tender invites. |

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| | | CO1 | Participation and team work in competitions, youth fests and exhibitions |
| | | CO2 | Participation in college fest, seminars, site visits |
| 9 | 520- College Project 3 | CO3 | NASA participation and involvement in decision making, organizing and co-ordinating the event |
| | | CO4 | Participations in Outreach, Social awareness and participatory activities. |



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| 10 | 721- Elective 7 (Conservation) | CO1 | Students will be able to apply understanding of importance of built and unbuilt heritage. Its importance, value and identity. |
| | | CO2 | Learn the types of conservation and techniques of preserving the heritage. |
| | | CO4 | Laws related to heritage structures and contextual details. |

Fourth Year B.Arch: Semester 8

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| 1 | 811- Professional Training | | During this term the students have to undergo training outside the institute in offices & organizations |
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Fifth Year B.Arch: Semester 9

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| 1 | 901- Architectural Design 9 | CO1 | Advanced design exposure with high level of research and data collection. |
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| | | CO2 | Understanding space study, summarize data collection and information process, technical details with Pre-design |
| | | CO3 | Students will be able to critically analyse the site planning, services, construction and environmental aspects. |
| | | CO4 | Understanding the holistic approach of design, benefitting the society at large. |



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| 2 | 902- Allied Design 9 | CO1 | Students will be able to justify elements of urban design of macro level |
| | | CO3 | Experiencing through live case studies and drawing appropriate solutions |
| | | CO4 | Understanding the roles and responsibilities of a town planner, design requirements and problem solutions. |
| 3 | 903- Architectural Building Construction 8 | CO1 | Advanced construction of beam / truss / arches for long spans in their AD |
| | | CO2 | Students will be able to correlate and apply the learnings of advanced construction in their designs. |
| | | CO3 | Able to work out technical details and application of folded plate, cable supported structures, space frames, Domes/Shell and Vault design in their AD. |
| 4 | 904- Theory & Design of Structures 8 | CO1 | Students will be able to assess suitability of beam / truss / arches for long spans |
| | | CO2 | Students will be able to assess cable supported structures and portal frames for industrial structures. |
| | | CO3 | Students will be able to argue about suitability of folded plate and shell structure |
| | | CO4 | Students will be able to critique about use of space frames and pre-stressed concrete in buildings. |



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| 5 | 906- Environmental Studies 4 | CO1 | Students will be able to explain meaning and key concepts of sustainability through chapter 11 of the National Building Code |
| | | CO2 | Students will be able to calculate energy consumption of everyday household electrical fittings and appliances with the help of a live building project (eg. their own house) using ECBC norms |
| | | CO3 | Students will be able to calculate generation of electricity using solar energy for a building project |
| | | CO4 | Students will be able to assess various green building certification systems based on their various parameters, understand systems like DEWATS, rain water harvesting, etc. Through comparative case studies of two buildings rated in GRIHA and IGBC |
| 6 | 908- Architectural Building Services 5 | CO1 | Students will be able to summarize building management systems and service core designs in buildings |
| | | CO2 | Students will be able to interpret MEP services in hotel/commercial kitchens through an expert session with help of real case examples of projects |
| | | CO3 | Students will be able to outline various integrated MEP services in a commercial building with case study of a live project |
| | | CO4 | Students will be able to create integrated MEP services layouts requirements and sizes of UGT, OHT, RWHT, HVAC, fire fighting layouts, etc |



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| 7 | 910- Professional Practice -2 | CO1 | Students will be able to interpret legal and technical aspects of land acquisition with reference to norms of compensation |
| | | CO2 | Students will be able to apply legal and technical aspect of valuations per the market standards |
| | | CO3 | Students will be able to analyse various norms related to rent with respect to case examples |
| | | CO4 | Students will be able to assess legal and technical aspect of dilapidation with reference to preparation of report |
| | | CO5 | Students will be able to illustrate easement of light, ventilation and access with reference to a building structure and fire insurance policy. |
| 8 | 911- Design Dissertation 1 | CO1 | Intense research, reading, fact- finding and data collection is needed from students. |
| | | CO2 | Choosing the project/ topic through conscious awareness to be seen imbibed in the process. |
| | | CO3 | Case study analyses, user group, issues related to the project and site parameters at both micro and macro level to be covered and specified. |
| | | CO5 | Students will be able to design an holistic area program with proofs, justifying the data gathered in all aspects. |
| 9 | 921- Elective -8 (Research Methodology) | CO1 | Students will be able to explain research methods in architecture. |
| | | CO2 | Understand types of quantitative and qualitative research and methodology. |
| | | CO3 | Students will be able to apply methods of research writing in the field of architecture. |
| | | CO4 | Students will have to write a research paper on the DD research which is a part of their DD project. |
| | | CO6 | Students will be able to present/ publish a paper in National / International Journals. |



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| 9 | 921- Elective 9 (Project Management/ Vaastushastra/ Green Building & Sustainability / Earthquake resistant design)) | CO1 | Students will be able to understand the scope of work, expertise, skill and decision making required for any of the elective. |
| | | CO2 | Importance of the subject in Architecture Design projects, its application and implementation. |
| | | CO3 | Laws, rules & regulations, liabilities and responsibility while working as a consultant/ designer in these expert fields. |
| | | CO4 | Experiencing live project case studies through experts and analyzing the critical aspects of the project. |

Fifth Year B.Arch: Semester 10

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| 1 | 1006- Environmental Studies 5 | CO1 | Students will be able to predict impact of built environment on its surroundings |
| | | CO2 | Students will be able to outline parameters of urban sustainability through case studies of sustainable cities |
| | | CO3 | Students will be able to outline sustainable building strategies for their individual Designs |
| | | CO4 | Students will be able to assess water, electricity consumption and sewage and solid waste management for their individual Designs |
| | | CO5 | Students will be able to design active and passive systems for their buildings with respect to environment protection |
| 2 | 1007- Architectural Representation & Detailing 8 | CO1 | Students will be able to interpret the desired system related to chosen design typology |
| | | CO2 | Students will be able to classify various ARD aspect with design parameters and standards |
| | | CO3 | Students will be able to calculate the required system after the design finalisation |
| | | CO4 | Students will be able to critique the designed system is right with cross verification by experts |
| | | CO5 | Students will be able to design a final ARD portfolio with design standards. |
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| 3 | 1012- Advanced Building | CO1 | Students will be able to conclude the use of suitable structural system for proposed design dissertation |
| | | CO2 | Students will be able to analyse advanced methods construction |
| | | CO3 | Students will be able to analyse Intelligent Structures and control of structural response in the architectural designs |
| 4 | 1009- Architectural Theories 4 | CO1 | Students will be able to research origin of various urban issues in their socio-economic context |
| | | CO2 | Students will be able to assess the facts critically and discuss with experts for finding a solution. |
| | | CO3 | Conceptual Solutions will be designed for the problems realized and students will be justifying the solutions with the researched facts, statistical data and participatory initiatives with policy makers/ experts. |
| | | CO4 | Students will be implementing the solutions in their DD projects or presenting them to the authorities for further action under outreach activities. |
| 5 | 1010 – Professional Practice | CO1 | Students will be able to interpret the duties and Liabilities in Profession under contract and rules and regulation of council of Architecture |
| | | CO2 | Students will be able to assess Legal responsibility of architect to Employers part of architect's duties towards client and also gain knowledge about arbitration & conciliation. |
| | | CO3 | Students will be able to outline MRTP Act, 1966, Environmental policies National and State level |
| | | CO4 | Students will be able to assess Role of Governmentbodies and local bodies for Maharashtra state |
| 6 | 1011- Design Dissertation | CO1 | Students will be able to summarize area program and conceptual design from the case study analysis |
| | | CO2 | Students will be able to illustrate design development and detailing |



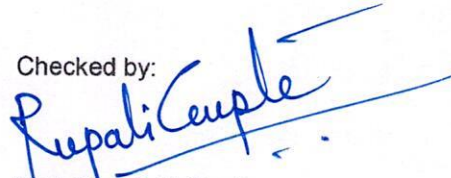
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| | | CO3 | Students will be able to outline the functionality of the design with cross jury evaluation |
| | | CO4 | Students will be able to organise construction and services detailing wrt architectural design parameter |
| | | CO5 | Students will be able to conclude the final design solution to the architectural topic and faculty feedback |
| 88 | 1022- Elective 10 | CO1 | Students will be able to explain research methods in architecture w.r.t conservation practise. |
| | | CO2 | Students will be able to outline research on any one aspect of building conservation practise based on thesis topic. |
| | | CO3 | Students will be able to apply methods of research writing in the field of architecture. |
| | | CO4 | Students will be able to analyse depiction of built heritage through study of chosen film |

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Principal



College stamp & Seal

