

Studio–I: Fire Safety Design Studio (Semester I)

Studio–I focuses on the application of fire and life safety principles in the planning and design of different building occupancies in accordance with the National Building Code of India (NBC 2016) and relevant Indian Standards. The studio enables students to prepare fire safety designs integrated with architectural planning. The course covers occupancy classification, fire risk assessment, means of egress, occupant load calculations, travel distance, fire-resistant construction, compartmentation, staircase and exit design, refuge areas, fire lifts, emergency lighting, and smoke management systems. Students develop fire safety layouts for institutional, educational, high-rise residential, commercial, office, industrial, healthcare, hotel, and assembly buildings. The studio includes the planning of active fire protection systems such as fire detection and alarm systems, hydrant systems, automatic sprinkler systems, hose reels, wet risers, downcomers, fire pumps, underground and overhead fire water storage tanks, and fire command centres. Students prepare evacuation plans, fire safety compliance drawings, and code compliance reports using AutoCAD/BIM-based tools. Design exercises emphasize integration of passive and active fire protection measures with building services. The studio concludes with the preparation and presentation of a comprehensive fire safety design project for a selected building type, demonstrating compliance with statutory fire safety regulations and best engineering practices.